

Defense AT&L



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Cutting-edge Approaches to Developing and Fielding Warfighting Capabilities

Defense AT&L Interview with
Gen. Gregory S. Martin,
Commander, USAF
Materiel Command

ALSO

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Inside the Air Armament Center

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PLA Designated Executive Agent for
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Three Modern Programs Meeting an Old
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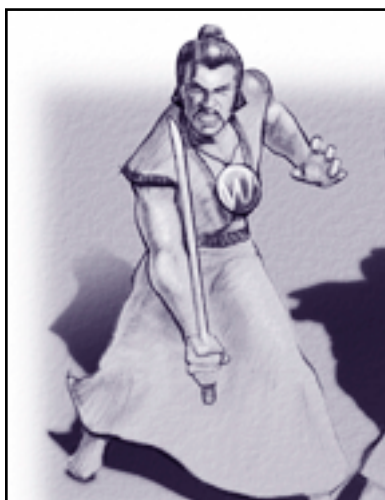
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USAF Materiel Command: Delivering War-Winning Capabilities on Time and on Cost

Gen. Gregory S. Martin, USAF

Commander, U.S. Air Force Materiel Command

Since August 2003, Gen. Gregory S. Martin has served as commander of the Air Force Materiel Command at Wright-Patterson Air Force Base, Ohio. The AFMC conducts research, development, test, and evaluation, and provides acquisition management services and logistics support to keep Air Force weapon systems ready for war.

Defense AT&L talked to Gen. Martin in February, learning that AFMC is on the cutting edge of research, considering everything from the latest in robotics,

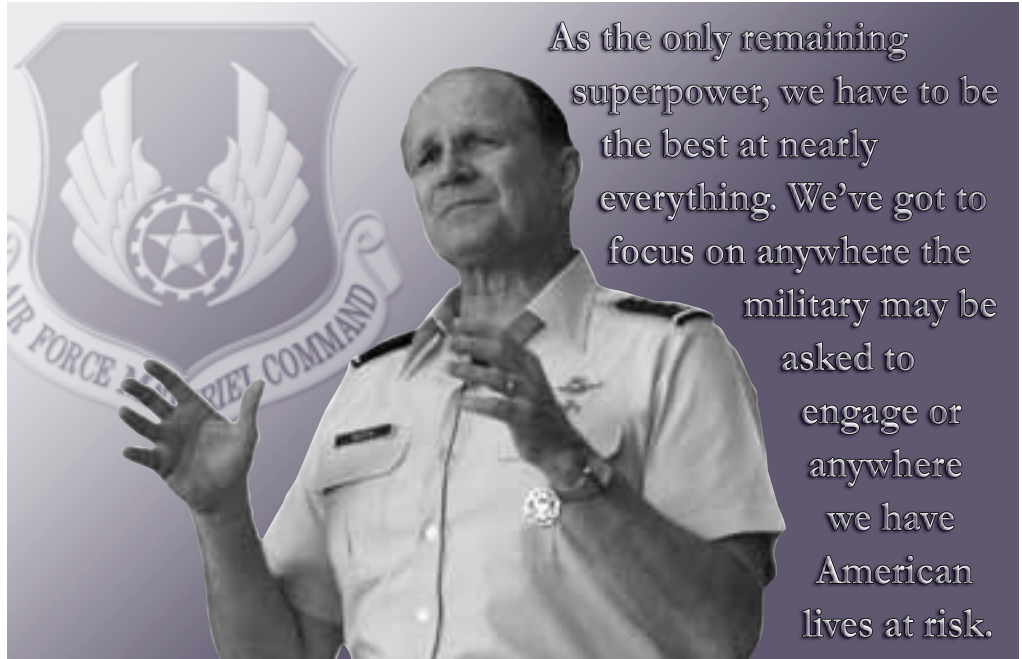
to the heat-sensor ability of a pit viper, to the self-healing capabilities of human cells, in its drive to deliver to the warfighter. Martin also spoke about structural changes to improve the AFMC organization and a focus on creating a "wingman" environment for the workforce.



Air Force Chief of Staff Gen. John Jumper recently lauded your command for its 2004 accomplishments. What were those successes?



The people of AFMC rose to the challenge to provide America with war-winning capabilities on time and on cost. In 2004, we achieved our best-ever aircraft due date performance, returning over 92 percent depot aircraft on time or ahead of schedule. We beat the scheduled aircraft production target, delivering 653 aircraft when only 644 had been originally scheduled. We met our engine production goal: 406 required, and 406 delivered. We put more "iron" on the ramp as a result of fewer aircraft in



As the only remaining superpower, we have to be the best at nearly everything. We've got to focus on anywhere the military may be asked to engage or anywhere we have American lives at risk.

our depots, and our MICAP [*aircraft unavailable for lack of critical parts*] hours were reduced by 19 percent—an all-time low. Our customer wait time continues to drop: it was 10 percent better in 2004 than 2003. The command completed its depot and supply management processes \$500 million under its forecasted cost estimates; the savings helped fund some of the global war on terror requirements.

We have a team that is motivated and dedicated to supporting the United States and the global war on terror. I'm proud of AFMC's people and accomplishments, and I'm excited to see more progress in 2005.



Can you explain your leadership philosophy, and how it's incorporated into your command?



The AFMC touches every other Service, every major U.S. Air Force command, and every person serving in our

armed forces. We provide cradle-to-grave support: from research and development of new technologies; to test and evaluation of weapon system performance; to providing professional acquisition support to the assistant secretary of the Air Force for acquisition, who is responsible for the acquisition of new weapon systems; to the day-to-day sustainment of every weapon system across our Air Force; to preserving our legacy aircraft for potential future use by the Air Force and our allies.

With such a large command and broad spectrum of responsibility, it's critical that we clearly articulate our priorities and focus. We do that through our strategic principle along with our vision. Together, they provide a solid foundation for our command.

AFMC operates under one vision: to be a valued team member of the world's most respected air and space force. In order to achieve that vision, we've got to deliver war-winning capabilities consistently on time, on cost. That's our strategic principle, our moniker, our rallying call. It's what we put on our stationery. It's what we want every member of AFMC to know, understand, and internalize.

Four years ago, our command provided only 64 percent of expected depot maintenance and spare engine work back to the customer on time. Today, over 92 percent of our products are returned to operators on the schedule we promised them. It's that kind of on-time, on-cost performance that earns us respect in the eyes of our customers.



What significant opportunities do you see for AFMC while you're at the helm—or perhaps more appropriately, in the cockpit?



AFMC's capabilities are already in high demand, and we have great people with vision who see us doing even more. Our job is to help develop and field warfighting capabilities across the complete spectrum of conflict. As the only remaining superpower, the United States has to be the best at nearly everything. We've got to focus on anywhere the military may be asked to engage or anywhere we have American lives at risk. Whether it is by focusing developments in our laboratories or upgrading older weapon systems in our depots, AFMC people must be continually looking for opportunities to develop integrated capabilities that will be successful on any and every battlefield.

We have to look at where we stand now and determine where we want to be in the future. In order to succeed, we have to envision all the points along the way where potential opportunities may come up. For example, we're currently studying the initial Quadrennial Defense Re-

view framework and determining where our work fits—and what additional areas we'll need to focus on. Putting thought into these plans ahead of time will ensure that our nation's armed forces reach the ultimate goal: to win in everything we do. And we're doing that by focusing our organizational structure and our people on things that make a difference.



In August of 2003, the secretary of the Air Force and chief of staff of the Air Force signed a memo, commonly called the "PEO Restructure," that reorganized the acquisition structure so both the management and execution of programs for major weapon systems reside with the commander of one of three AFMC product centers. Previously, program executive officers in charge of major systems had a very different sort of chain of command that didn't necessarily hold one commander responsible for the overall program. What are some of the major effects of this reorganization?



The PEO restructure has been one of my top priorities, and it's going very well. Let me explain what we did.

Our three product centers are the Aeronautical Systems Center here at Wright-Patterson Air Force Base, which is responsible for aircraft; the Electronic Systems Center at Hanscom Air Force Base, Mass., which is responsible for C4 [command, control, communications, and computers] and ISR [intelligence, surveillance, and reconnaissance] systems; and the Air Armament Center at Eglin Air Force Base, Fla., which is responsible for armaments and munitions [see "A Profile of Excellence" on page 9].

Under the PEO restructure, the commanders of these centers became dual-hatted as the center commander and PEO/Aircraft, PEO/C4ISR, and PEO/Armaments and Munitions, respectively. As PEOs, they work directly for the under secretary of the Air Force for acquisition who, by the way, has line responsibility and authority for the acquisition mission of our Air Force. As center commanders, they work for me, and it's my responsibility to ensure that we're trained, organized, and equipped to support the acquisition mission.

From my perspective, the PEO restructure has been successful. When I attend program management reviews with the under secretary of the Air Force for acquisition, there is now one responsible person who answers to the under secretary for acquisition-related issues and to me for train-organize-equip issues. There's no longer finger pointing between PEOs and center commanders because now they're one and the same. It makes for improved efficiency and accountability.

The primary responsibility of these dual-hatted commanders is to be a PEO. To help them handle these broad

Gen. Gregory S. Martin, USAF

Commander, U.S. Air Force Materiel Command

Gen. Gregory S. Martin earned a bachelor's degree from the U.S. Air Force Academy in 1970 and a master's degree in business management from Central Michigan University in 1977. He entered the Air Force in June 1970 with a commission from the U.S. Air Force Academy.



In addition to flying 161 combat missions in Southeast Asia, Martin commanded the 67th Tactical Fighter Squadron, the 479th Tactical Training Wing, and the 33rd and 1st fighter wings. He has logged more than 4,600 flying hours in various aircraft, including the F-4, F-15, C-20, and C-21.

Martin also served as vice director of the Joint Staff's Force Structure and Resources Directorate; director of operational requirements for the U.S. Air Force; and principal deputy to the assistant secretary of the Air Force for acquisition. Before assuming his current position, Martin served as the commander of U.S. Air Forces in Europe and Allied Air Forces Northern Europe.

responsibilities, we assigned each two deputies at the general officer/senior executive service level: a deputy for acquisition, who serves as a focal point for acquisition issues, and a deputy for support, who serves as a focal point for acquisition support issues.

We've now begun to implement the second phase of the PEO restructure, which will transfer PEO/program management responsibilities for weapon systems in their sustainment phase to our Air Logistics Center commanders.

Q *AFMC has developed many capabilities to keep deployed troops safer. Can you comment on the success of some of these programs? Which have proved particularly effective and/or popular among the troops?*

A One example: In response to an urgent need by Central Command Air Forces, our folks at Electronic Systems Center quickly developed a force protection airborne security system known as Desert Hawk. It's a small, remotely piloted aircraft, weighing about 7 pounds, that patrols the perimeter of U.S. installations at forward-deployed locations. With its built-in video camera, Desert Hawk trans-

mits images back to the ground control station, providing real-time footage of the base perimeter, day or night. The Desert Hawk is an eye-in-the-sky for our deployed troops and saves lives by adding another layer of defense that provides early warning and detection.

Another example is a small robot called ARTS, or All Purpose Remote Transport System. It's a bobcat-sized tractor, complete with a robotic computer system with custom attachments, that can remotely explode submunitions and other devices. It's only one of several small robotic systems developed by AFMC's Air Force Research Laboratory to counter threats from terrorist bombs and improvised explosive devices. In the past, explosive ordnance teams didn't have equipment that gave them a standoff capability to defuse terrorist devices or remove unidentified objects from roads, base perimeters, or airfields. AFMC, in cooperation with Air Combat Command and the 99th Civilian Engineer Squadron at the Nevada Test Ranges, quickly developed ARTS after an American was injured by an explosive device while clearing an area in Iraq. Today there are 60 ARTS fielded in Iraq and other locations in the world to protect explosive ordnance disposal and combat engineer troops. Plans are to produce up to 71 to be placed throughout the Air Force as needed.

We have other new life-saving technologies in the works using miniaturized components and new and developing technologies.

Q *What do you see as the most promising technologies of the future?*

A New technology will provide American forces greater capability in response to emerging needs. We're working to improve the link between new technology and operational needs. We're on the edge of operationally employing directed energy, information technology, and propulsion. These new technologies offer significant near-term potential to our military forces, particularly to our air and space forces.

We're also concentrating on nanotechnology and biotechnology. Research in nanotechnology explores the manipulation of matter at the molecular level to design novel materials, sensors, and systems. As for biotechnology, we're delving into biomimetics: learning more about how nature has solved a problem, and how we can emulate it. For example, pit vipers possess incredible heat-detecting capabilities that are much more sensitive than anything we can do without the need for cryogenic cooling. If we can harness technology found in nature, we can offer new capabilities to our men and women in uniform. We're also researching self-healing materials and self-assembly—capabilities of living cells. It may seem like far-

If we can harness the technology found in nature, we can offer new capabilities to our men and women in uniform. This may seem far-out stuff, but it's closer to reality than you might think. AFMC is a visionary command.

out stuff, but it's closer to reality than you might think. AFMC is a visionary command, dedicated to the continuous investment in transformational technologies so that America can save lives and retain its military edge in the global war on terror.

Q

How does AFMC ensure that what you develop in the labs is what the warfighter needs?

A

When I came to AFMC just about 21 months ago, one of my major focus areas was to improve the link from technology to warfighter. One of the first things we did was create a capabilities integration directorate on the headquarters staff, led by a two-star general, to provide a focal point for linking our science and technology efforts to the integrated capabilities review and risk assessment, or ICRR, process. The new directorate ensures we're focused on the capabilities gaps and requirements outlined in the ICRR process. We also focus on technology that provides high leverage and high payoff. We go through an analysis process to give us better insight into the right paths to breakthrough technology. For example, lasers were very advanced but not practical until we developed adaptive optics. Now they're becoming practical for military application.

There are tremendous opportunities to transform warfare this decade. As we study the initial Quadrennial De-

fense Review framework, our strategy is to align our research, development, science, and technology with the Air Force core missions: persistent C4ISR [command, control, communications, computers, intelligence, surveillance and reconnaissance], global mobility, and rapid strike. These missions fit closely with the chief of staff of the Air Force's coalescing constructs: persistence, cursor over the target, and one time of flight.

Persistent C4ISR is the ability to "stare" from a designated sensor, platform, or combination of platforms. In order to meet this core mission, we need connectivity between space, near-space, air, and terrestrial platforms. The platforms and systems must be networked, self-cueing, and, in essence, must talk with each other to give the effect of 24/7 C4ISR. When a threat occurs, our interconnected systems must present it in a way people can understand; it must look like the battlespace, and it must make sense to the decision makers.

The core mission of global mobility requires a global infrastructure, interconnected systems, total asset visibility, and seamless inter-modal transportation. The global mobility system must know where everything is located and be able to move materiel seamlessly between air, ship, train, and truck. Global mobility must be interconnected with command and control in order for combatant commanders to plan and execute combat operations.

By successfully accomplishing these missions, the Air Force is able to provide rapid strike using platforms that include a loitering aircraft equipped with precision-guided

Gen. Martin on the flightline at Wright-Patterson Air Force Base, Ohio.



weaponry. And in the future we'll be able to provide hypersonics, airborne lasers, or space-based kinetic or directed-energy systems.

Q

You've stated that one of the biggest challenges AFMC faces is providing better support for Air Force major commands, including Air Mobility Command—AMC. Which areas are you currently focused on improving? How has your organization responded to provide better support to major commands during your tenure?

A

Several times a year, I meet with my counterparts at each of the other major commands to find out what they need from AFMC and whether we're delivering on our promises.

Last July, I met with the leaders of AMC to review programs, discuss sustainment issues, and look for ways to better support our air mobility warriors. We addressed the positive steps being taken to ensure that the C-130J Hercules tactical transport aircraft would be ready to perform in a combat environment by the end of 2004. We discussed enhancing the communications for passengers on the C-32 and C-40 aircraft, and sustainment approaches for the Tunner and Halvorsen aircraft cargo loaders. It's meetings like these that have helped AFMC and the acquisition community to better understand the needs of AMC and our other major commands in the areas of acquisition and sustainment.

I mentioned earlier the unprecedented sustainment support being provided by our logistics centers. That's probably the area where we have the most day-to-day impact on the other major commands, and our depot workforce is an impressive team of professionals.

Q

What are some lessons learned from Operation Enduring Freedom and Operation Iraqi Freedom? How does interoperability fit into the picture?

A

It really starts with a better understanding of how we've accomplished things in the past and an honest assessment of what we could do better. When we look at lessons learned, we need to look at a 12-year period involving five conflicts, with each conflict being characterized very differently. Yet when I look at these conflicts in total, some key areas emerge that require our focused efforts.

Number one: I think we all agree that we need global access. Who would have thought that you could have attacked Afghanistan, a land-locked country, and you were going to have to go over Pakistan to get there? Or that you would go over Azerbaijan, Turkmenistan, Kazakhstan, Uzbekistan—all part of the former Soviet Union—and

that some would not only allow you to fly over their territory, but also to operate in-country bases? Global access is very important to us, particularly when we start to talk about the global war on terror.

The Air Force needs to conduct sustained operations from many bases simultaneously, and to do that we need the right levels of expeditionary combat support troops: security forces, communications, services, medical support, fuels. Despite the challenges, we have operated successfully during operations Enduring Freedom and Iraqi Freedom from 36 different bases.

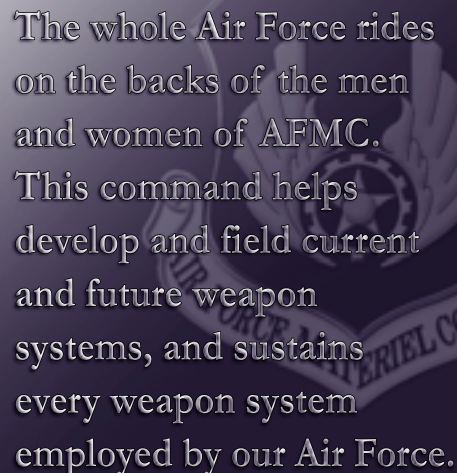
There's no question about the force multiplier effect of the Combined Air Operations Center, the hub for controlling all joint and coalition air operations. The more we grow as a joint and combined air team, the more we realize that we need visual awareness of the battlespace for our senior leadership to make informed decisions instantaneously. We need fully integrated planning and execution. We learned from Anaconda [*a March 2002 battle in Afghanistan's Shahikot Valley*] that it can't be parallel. It can't be sequential. All of the military services must be integrated in the planning and execution from the get-go.

Q

Currently, the AFMC workforce comprises about 80,000 military and civilian employees. Given the increased operations tempo of the last few years, what kind of management strategies are in place to enable your workforce to meet their goals and keep up the accelerated work schedule?

A

We're really busy, and I'm proud of our airmen and Air Force civilians for what they do every day. I often say that the whole Air Force rides on the backs of the men and

The logo of the Air Force Materiel Command is a shield-shaped emblem. It features a central five-pointed star with a circular center. Below the star is a banner with the text "AIR FORCE MATERIEL COMMAND". The shield is flanked by two stylized wings. The text "The whole Air Force rides on the backs of the men and women of AFMC. This command helps develop and field current and future weapon systems, and sustains every weapon system employed by our Air Force." is overlaid on the right side of the logo.

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women of AFMC. To keep our large workforce focused on the right priorities, I think it's critical to have clear goals and standards. I often reiterate these goals along with our command mission, vision, and strategic principle.

We've also restructured the command in an effort to eliminate stovepipe organizations focused on a particular weapon system or platform. Instead, we are bringing similar systems together under the same organization to benefit from synergistic working relationships. For example, we brought the F-15, A-10, F-117, and F-16 offices and others together under a Fighter/Attack Systems Wing. Our new wing structure will ultimately save money by eliminating duplicate efforts, provide our people a productive environment, and make us more identifiable to the rest of the Air Force.

As part of the restructure, we're defining REUs—resource earning units—across the command. When the Air Force stands up a C-130 squadron, that squadron comes with set resources including aircraft, pilots, navigators, flight engineers, loadmasters, maintenance personnel, etc., all calculated to enable that unit to fly a certain number of missions in both training and contingency operations in support of a joint force commander. The squadron comes packaged in an REU based on the type and number of aircraft, mission, and other factors.

AFMC has no equivalent REU structure for its program offices. In other words, we don't have a clear and simple understanding of the incremental contribution of each person to the mission of a program office. So when we're asked to stand up new program offices in AFMC, the resources come from some other program or programs—out of hide—and then we hire a certain number of additional contractors to help, and we charge those costs to the major commands funding the acquisition program. Further, when we go through reduction-in-force drills, we end up justifying each person from the bottom up and always pare off 5 to 10 percent.

What we must do instead is describe our program organizations in an REU concept where each earns a certain number of people and specialties by its existence, which then means that we have a "force structure" mindset: if you want a new program, you authorize the right number of military and Air Force civilian people, and then you supply them. The beauty is that if you are capped in



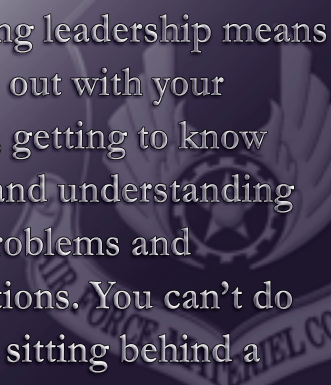
Martin chats with airmen on the flightline at Wright-Patterson AFB.

human resources, you will think very carefully about starting new programs without divesting yourself of other programs or transforming the way in which you aggregate legacy program offices.

Q *You have specific workforce development areas on which you focus. Could you please tell us about a few of the key areas?*

A First, there's force development. Our people are vital to everything we do across AFMC, and we must focus on the professional development of each military member and Air Force civilian—assignments, career progression, deployments, advanced Air Force and academic education, job training, supervisory training, and so on. We'll continue to work closely with the Air Force installations and logistics and the Air Force acquisition communities to complete career development templates for all our military and civilian specialties.

In terms of the junior force, I initiated a study last year. The junior force is defined as officers, enlisted, and civilian members less than 30 years of age or with less than eight years of military experience. The findings were stark but not surprising: there's a bit of a generation gap in AFMC. The junior force wants to feel valued and appreciated by being given challenging assignments, purposeful



Inspiring leadership means getting out with your people, getting to know them, and understanding their problems and frustrations. You can't do that by sitting behind a computer and generating e-mails.

training, and career opportunities. But their motivations differ from those of their supervisors. The challenge lies in training our supervisors to develop this next generation and bring the junior force into the fold with their spirit and motivations intact. We've stood up junior force councils on our installations to enable our younger members to communicate directly with senior leadership. We've also developed toolkits for our supervisors to highlight necessary resources and train them to effectively lead, mentor, and recognize the junior force. Retention of the junior force is essential to AFMC's success, and by effectively training and mentoring our junior force, we can generate unity and enthusiastic support of the AFMC mission.

Safety and Wellness: Every airman and Air Force civilian, is a precious resource. When we lose someone through a mishap, health situation, or death, there are far-reaching effects to the mission, to the team members, to the unit, to the individual's family, to our Air Force family.

I want to institutionalize a "wingman concept" as articulated by our secretary and chief of staff. As wingmen, we watch out for each other, care for each other, and help each other in times of stress. But that can't be taken for granted. Inspiring leadership is key, and that means getting out with your people, getting to know them, and understanding their problems and frustrations. You can't do that by sitting behind a computer and generating e-mails. It's personal, it's face-to-face, it's sincere, and it's direct. Personal involvement at all levels can instill a stronger sense of camaraderie and worth, both of which are vital to our success.

Physical Training and Fitness: I want to emphasize physical training and overall fitness. For our military members, the objective is to not only pass the fitness test, but

also to prepare for duty under austere and strenuous deployment conditions. That's why we call our program "Fit to Fight." And I am committed to inspiring a higher level of health and fitness within our Air Force civilian workforce as well.

Q

You've made a distinction between the headquarters AFMC mission and the AFMC mission. How are the two missions different? How does making this distinction improve customer service?

A

The mission of Air Force Materiel Command is to "deliver war-winning expeditionary capabilities to the warfighter through technology, acquisition support and sustainment." At the headquarters, we play a supporting role as our field organizations achieve that mission. The mission of the headquarters is to "shape the workforce and infrastructure to develop, field, and sustain war-winning expeditionary capabilities." We support our field organizations by providing policy, allocating resources, and overseeing performance. The separate HQ AFMC mission statement clearly focuses our HQ airmen and Air Force civilians on their role.

To further emphasize the different missions of the field and the headquarters, I also reorganized our headquarters. For example, we created the capabilities integration directorate, which is responsible for AFMC's development mission. This directorate is a consolidation of the requirements, acquisition excellence, and intelligence directorates, and is the focal point for science and technology. HQ AFMC now has a single office responsible for integrating science and technology, intelligence, modeling and simulation, and incorporating them into the capabilities produced by our AFMC acquisition process.

Q

From your unique perspective, how can DAU improve or enhance the curriculum to better support the AFMC workforce? What would you like to see added to the current curriculum to better prepare people for the realities of your workplace?

A

I really appreciate the work DAU has done to automate and make widely available the very best acquisition training for our people. In fact, we are looking at DAU as a benchmark for some of the training we know we need to deliver to AFMC people. What I'd ask is that DAU continue to strive to make acquisition training as realistic and tied to current operations as possible. We in AFMC are very grateful for the opportunity to take advantage of the many outstanding DAU courses which make us better professionally and help us achieve our mission of delivering "war-winning capabilities ... on time, on cost."

A Profile of Excellence

Inside the Air Armament Center, Air Force Materiel Command

Maj. Gen. Robert W. Chedister, USAF



Maj. Gen. Chedister explains the Air Armament Center's marquee program, the small diameter bomb—a highly accurate and lethal new weapon—to Dr. Jack Dwyer, DAU professor and site manager of DAU's satellite campus at Eglin Air Force Base, Fla.

Equipping the United States and its allies with sophisticated weaponry, the Air Force Materiel Command's Air Armament Center is responsible for developing, acquiring, testing, deploying, and sustaining all air-delivered weapons. It's a vital mission, and like most government agencies today, the AAC is trying to do more with less. The organization has successfully incorporated transformation and divestiture strategies, while still delivering outstanding products on time, on cost, with impressively quick turnaround—

thereby contributing significantly to the successes Gen. Gregory S. Martin, our commander, described at the beginning of his interview in this issue.

Eglin is the Air Force's largest base and, we believe, one of America's crown jewels. No other place in the country has the people, facilities, and capabilities to produce air armaments so well. We enjoy significant local and state support for our missions. We've been able to preserve the best land, water, and air range in our country for all of

Chedister is the Air Force program executive officer for weapons, and commander, Air Armament Center, Air Force Materiel Command, Eglin Air Force Base, Fla.

**The Air Armament Center
has successfully
incorporated transformation
and divestiture strategies,
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outstanding products on
time, on cost, with
impressively quick
turnaround.**

the Services to use for development, testing, and training. For all these reasons, Gen. Martin has dubbed Eglin the Nation's Center of Excellence for Air Armament.

Increased OPTEMPO and Life Cycle Management

Operations tempo has greatly increased over the last several years, and it is thanks to the people of Team Eglin that we've sustained the OPTEMPO. They respond magnificently every time the Air Force calls on them. For instance, we brought the passive attack weapon from concept to the field in under 100 days, giving the warfighter a unique capability to immobilize targets with precision, while minimizing collateral damage. In another effort, our team developed the massive ordnance air blast in only 10 weeks. Although we never needed to use it in theater, the world saw the successful tests of this weapon on television. If the mission had needed it, it was ready.

The increased operational tempo has demonstrated the need to keep life cycle management in the forefront as we develop a system. We've learned the importance of incorporating emerging technologies into our acquisition strategies. The insertion of emerging technologies can provide significant enhancements that we can design into a system to extend its useful life for the warfighter. To accomplish this, we collaborate with our sister Services to identify synergies that we can apply to our programs to increase capability and/or extend their lives.

One such collaboration is our joint effort with the Army's single manager for conventional munitions to highlight industrial base capacity and capability issues that may extend or shorten the useful life of our weapons as appropriate. The end result will be to develop more efficient methods for designing life cycle management into our systems and to apply lessons learned from the use of our weapon systems during current operations to the design process, thereby ensuring that needed capabilities are delivered.

Shifting the Focus to Capabilities

A priority for AAC is transitioning the focus from a program-centric methodology to one focused on capabilities. The universal armament interface exemplifies just such a transformation. In the past, weapon programs spent a large part of their funds integrating a new weapon onto an aircraft. The expenditure included costs for the hardware (wiring, connectors, special interface circuits) and modifications to the software of both the aircraft and the weapon. While standardizing the aircraft/store interface under MIL-STD-1760 helped to eliminate many hardware changes, software costs became the largest portion of the integration budget. A joint team from the AAC and the Aeronautical Systems Center at Wright-Patterson Air Force Base, Ohio, came together to develop a capability for the warfighter to reduce the weapon integration costs and provide them with plug-and-play capability, which will dramatically reduce the costs and cycle time to integrate weapons. The Army and Navy are involved in this initiative to explore and develop the technology that will allow smart weapons to be fielded without requiring changes to aircraft software.

Transformation and Divestiture

Transformation and divestiture—eliminating non-essential policies and programs and applying new ones that generate higher productivity and increased customer support—are part of the AAC's strategic plan. In June 2004, we participated in Operation Paper Shredder and eliminated nine of the 28 reports we submitted for divestiture. The AAC is also making great strides in using the streamlined model for divestiture in foreign military sales. Two years ago, the AAC team and the Air Force Security Assistance Center transformation team developed a core cadre process that proved highly successful in an initial beta test. By considering the FMS program as a single entity, the new process streamlines the reviews, places justification in one document, and eliminates potential duplication normally created by separate resources, both in personnel and funding reviews.

Leading the Way in Workforce Development

It's well known that the future of the workforce is a matter of concern. In some career fields, over 50 percent of personnel are or will be eligible for retirement in the next five years. AAC uses a three-pronged approach to ac-

complish workforce shaping and to ensure a viable, well-equipped workforce:

Recruiting/Accession Planning

We are developing and implementing methods to attract and recruit a constant supply of new employees at the right number and skill mix.

Workforce Development

We are ensuring that the Air Force civilian workforce stays current through the establishment of a culture of learning and mentoring, one example of which is the Air Armament Academy—or A³. [For an in-depth discussion of A³, see “A Learning Transformation: The Eglin Learning Organization, Defense AT&L, July-August 2004.]

Retention/Separation Management

We use DoD- and Air Force-approved separation and retention authorities to help retain critical skills, while at the same time creating vacancies in a controlled manner.

Space prohibits my writing at length about all three approaches; however, workforce development deserves more than a mention. With support and funding from Blaise Durante, deputy assistant secretary for management policy and program integration, we created A³ about 18 months ago. Durante’s vision and ours is to establish the AAC as a global benchmark for acquisition and combat support excellence through exceptional workforce development.

A³ is both a push and pull learning facility. Leadership pushes certain mandatory courses we feel are necessary for building a rock-solid foundation within our workforce. In turn, workforce members pull—or make recommendations for—courses they believe would also assist. These courses are created and taught by subject matter experts from within our organizations. Courses that cover the joint capabilities integration development systems and the joint operations have helped lead the way to focus on capabilities. Over 8,000 people attended over 400 classes during fiscal 2004, our first year of operations.

The most visible results we’ve seen at the AAC relate to cross-pollination of various disciplines. For example, a personnel specialist attended the munitions systems effectiveness class and reported that it dramatically enhanced her ability to create or improve acquisition workforce position descriptions. In another instance, developmental testers from the 46th Test Wing attended a design of experiments class taught by their operational test counterparts in Air Combat Command’s 53rd Wing here at Eglin. They indicated that the class was rich with benchmark processes and tools they will apply to development test design and execution.

We brought the passive attack weapon from concept to the field in under 100 days, and in another effort, our team developed the massive ordnance air blast in only 10 weeks.

Last year, Frank J. Anderson, president of the Defense Acquisition University, and I agreed to establish a DAU satellite office at Eglin to better support the AAC acquisition workforce. The DAU/AAC team has been a tremendous partnership. The DAU satellite office stood up the same month as A³. The classes offered have been effective as refreshers for experienced acquisition personnel and as introductory material for non-acquisition personnel. What’s more, we have avoided hundreds of thousands of dollars in annual travel expenses by hosting DAU classes at Eglin. With 23 additional DAU classes offered in fiscal 2005, bringing the total to 38 course offerings including the Level III Program Management Office Course, this benefit continues to grow.

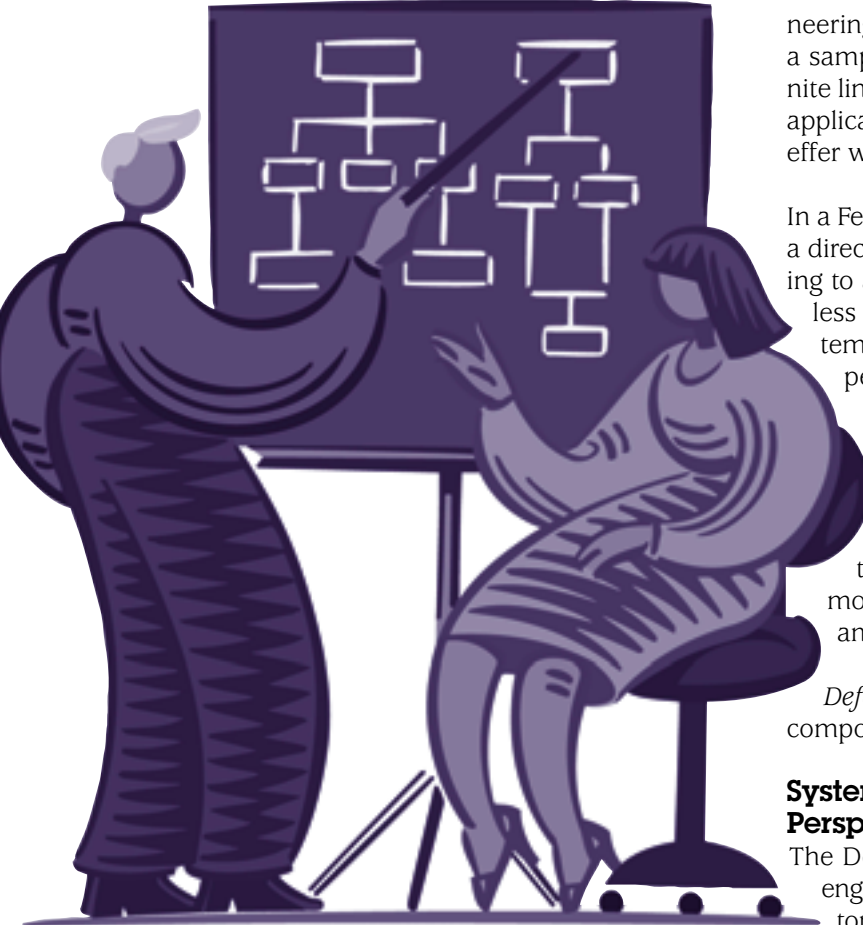
[The AAC’s innovative workforce development initiatives were recognized in November 2004, when acting Under Secretary of Defense for Acquisition, Technology and Logistics Michael W. Wynne celebrated AAC as Gold Winner of the first USD(AT&L) Workforce Development Award. (Defense AT&L, March-April 2005).]

By the time you read this, Eglin Air Force Base will be on the brink of an operational readiness inspection, a component of which will be a wartime materiel request exercise. Based on past experience, we are confident we’ll perform very well in this exercise, and we couldn’t be more proud to show off Team Eglin’s broad array of talent and our responsiveness and ability to get weapons to the warfighter on time and on cost.

Comments and questions may be addressed to Maj. Valerie Trefts at valerie.trefts@eglin.af.mil.

Revitalizing Systems Engineering

How Six Components Are Meeting the Acting USD(AT&L) Imperatives



"ALL PROGRAMS RESPONDING TO A CAPABILITIES OR REQUIREMENTS DOCUMENT, REGARDLESS OF ACQUISITION CATEGORY, SHALL APPLY A ROBUST SYSTEMS ENGINEERING APPROACH."

MICHAEL W. WYNNE AND MARK D. SCHAEFFER,
DEFENSE AT&L MARCH-APRIL 2005.

neering across the Department of Defense. "Analyses of a sampling of major acquisition programs show a definite linkage between escalating costs and the ineffective application of systems engineering," Wynne and Schaeffer wrote.

In a February 2004 policy memorandum, Wynne issued a directive to meet the problem: "All programs responding to a capabilities or requirements document, regardless of acquisition category, shall apply a robust systems engineering approach that balances total system performance and total ownership costs within the family-of-systems, system-of-systems context."

Wynne and Schaeffer called for "systemic, effective use of systems engineering as a key acquisition management planning and oversight tool" and said that in addition, DoD would "promote systems engineering training and best practices among our acquisition professionals."

Defense AT&L presents the responses of six defense components to the acting under secretary's call to arms.

Systems Engineering Outreach: A DCMA Perspective

The Defense Contract Management Agency's systems engineering revitalization efforts include creating a customer-focused, performance-based organization that encourages creativity and uses customer-driven measures; and providing product assurance services that meet or exceed customer expectations. DCMA has embarked on a redefinition of its traditional quality assurance services to an acquisition life cycle-based comprehensive product assurance program. Increased participation using systems engineering processes and practices during the system development and demonstration phase is seen as key to implementing this new approach. Engineering and critical thinking are increasingly important in these revitalization efforts and resource management, skills management, and supplier management (which include working with industry to improve supply chain management as well as benchmarking with other organizations).

The application of systems engineering processes and practices enables the DCMA engineers to correlate risks with contract performance requirements. The DCMA

In the March-April 2005 issue of *Defense AT&L* (pages 14-17), Michael W. Wynne, acting under secretary of defense for acquisition, technology and logistics, and Mark D. Schaeffer, principal deputy, defense systems and director, systems engineering, Office of the USD(AT&L), called for the revitalization of systems engi-

INCREASED PARTICIPATION USING SYSTEMS
ENGINEERING PROCESSES AND PRACTICES DURING
THE SYSTEM DEVELOPMENT AND DEMONSTRATION
PHASE IS SEEN AS KEY. (DCMA)

analyses result in a prediction of the impact on performance, cost, and schedule, which allows for early corrective action. This, coupled with recommendations and opinions, supports the program manager's goal of providing a successful weapon system program within cost and schedule constraints.

Integrating Risk Management

Based upon programmatic outcomes, DCMA has instituted an integrated system of risk management to provide acquisition program managers and their organizations with focused acquisition support. Increased focus on high-risk events identified throughout the product life cycle is fundamental to this new approach. Key components of the system are the in-plant surveillance for engineering, software development, quality assurance, and manufacturing processes. DCMA personnel analyze trends of key performance parameters by using technical performance measures against planned baselines in assessing impact on acquisition milestones. Cost and schedule impacts are assessed on the basis of the in-plant surveillance, with inherent projections of future cost growth and schedule delays predicated on the attainment of key performance parameters.

DCMA strives to drive consistent engagement in the system development and demonstration (SDD) phase by providing a framework for engaging with its customer base to account for unique activities in the SDD environment; the definition of roles and responsibilities; and the development of consistent assessment tools, techniques, and metrics for the entire life cycle. Additionally, the introduction of an interdisciplinary teaming approach is viewed as essential. It will assure that suppliers' plans and processes are capable of meeting customer outcomes and are effectively executed; and that the process interfaces that drive product quality are identified and operating effectively. Early interface with the customer through customer-outcome strategy meetings are to be used to identify and clarify customer outcomes and performance measures early in the program. The information extracted is used to develop unique program-based surveillance strategies that provide for the early identification and

analysis of program risk factors, critical product characteristics and processes, and risk-consequence information. Also, increased effort in the SDD phase using systems engineering methodologies will ensure that a proper foundation for program execution is established, that risk assessment and mitigation are addressed, and that potential program impacts are forecast early.

Capability Maturity Model Piloted

DCMA is piloting the use of capability maturity model integration (CMMI) as a tool to determine the risk associated with suppliers' systems engineering processes. CMMI-based risk management methodology is targeted for ACAT I and II programs in the technology development or system development and demonstration phases. This method helps DCMA engineers to identify and prioritize the most critical supplier processes; to evaluate those processes objectively relative to industry's best practices as defined in the CMMI; to identify suppliers' process strengths and weaknesses and the impact on product and program performance; and to assess program and product risk—along with other measures, such as earned value and technical performance measurements—and predict future program outcomes.

DCMA is also continuing efforts to improve the skill levels of its engineering workforce by developing internal courses, improving the guidebooks, and participation in the INCOSE [*International Council On Systems Engineering*] Systems Engineering Certification and Sabbatical programs. The latter allows DCMA employees to continue full-time studies at a local college or university for a period of 18 months. Booz Allen Hamilton, under contract with DCMA, has developed a list of the general and technical competencies needed for the engineering workforce, and efforts are under way to develop career guides.

R. Pillai, deputy director, Contract Technical Operations

Coupling Acquisition and Systems Engineering Processes at DISA

The Defense Information Systems Agency is acquiring more complex systems to fulfill the mission of providing global, net-centric solutions to warfighters. DISA is challenged to improve the time to market of these products and services (network-centric enterprise services and Internet protocol convergence, for example), while ensuring they satisfy users' needs. We believe that a close coupling of acquisition and systems engineering processes throughout the life cycle is essential.

DISA's recent transformation initiatives have enabled the agency to progress toward an integrated acquisition/systems engineering environment as—quite simply—the way we do business. Six key components of DISA's efforts follow.

Demonstrating Senior Leaders' Support

It starts at the top. As shown repeatedly in industry best practices, the foundation for institutionalizing systems engineering is the commitment of the senior leaders, demonstrated through action and communicated throughout the enterprise to instill staff commitment. DISA leadership has done just that over the past 18 months, and two key actions are particularly noteworthy.

In October 2003, DISA created the component acquisition executive (CAE) office in accordance with DoDD 5000.2 to implement DoD acquisition policy and guidance and to oversee and guide the acquisition of all programs or projects. The CAE reports directly to the DISA director, is the line of authority for all program managers, and is responsible for representing the agency within the broader OSD-level acquisition community.

DISA also created a systems engineering organization that works in coordination with the CAE office to “plan, engineer, acquire, and integrate joint, interoperable, secure global net-centric solutions satisfying the needs of the warfighter and develop and maintain a first-class engineering workforce to support the needs of DISA’s programs.”

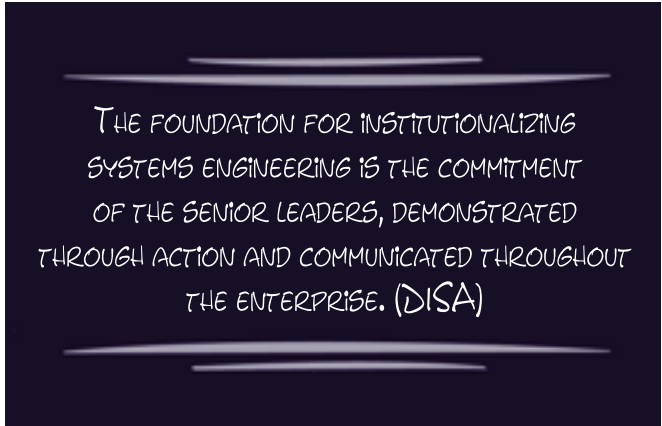
The DISA director identified world-class acquisition and world-class engineering as two of his top 10 transformation initiatives for the agency. This vision and the new organizational constructs serve as the foundation for institutionalizing systems engineering rigor for all DISA programs, regardless of the acquisition category.

Documenting Processes

The first step was to agree upon and document a set of repeatable systems engineering processes. We formed a working group of engineering leaders from across the agency to oversee the effort. The resultant DISA systems engineering process document incorporates best practices from DoD, industry, and academia, coupled with many decades of systems engineering experience represented within the working group. It addresses:

- Activities, milestone events, and products to be accomplished throughout the acquisition/engineering life cycle
- Mandatory systems engineering artifacts (e.g., project schedule, systems engineering plan, joint capabilities integration, and development system products)
- Entrance and exit criteria for key reviews (e.g., technical requirements review)
- Guidelines for tailoring the systems engineering processes
- Cross-program engineering processes to address critical program interdependencies for DoD’s future net-centric environment.

Additionally, the systems engineering working group established ongoing process improvement mechanisms, en-



THE FOUNDATION FOR INSTITUTIONALIZING
SYSTEMS ENGINEERING IS THE COMMITMENT
OF THE SENIOR LEADERS, DEMONSTRATED
THROUGH ACTION AND COMMUNICATED THROUGHOUT
THE ENTERPRISE. (DISA)

abling DISA’s documented processes to evolve as new programmatic, technological, or operational challenges arise.

Training the Professional Workforce

We needed to provide our acquisition managers and systems engineers with the right level of training to implement systems engineering with rigor within their individual programs/projects. To this end, we have reinvigorated the agency’s engineering career management program and continue to increase the number of certified engineers in our workforce. We have developed a partnership with the Defense Acquisition University to integrate DISA’s systems engineering processes, software, and network engineering best practices and net-centricity tenets into the DAU training curriculum.

Governing Systems Engineering Implementation

We adopted a phased approach to implement the systems engineering processes across DISA’s programs/projects. It began with a three-month pilot period, where our primary goal was to validate the documented processes and create a repository of systems engineering products. In subsequent phases, an increasing number of programs have been earmarked for inclusion until all programs/projects have adopted the DISA standard processes.

DISA’s ongoing governance structure involves ensuring compliance with documented processes and ensuring that engineering content is sound and meets stated and implicit requirements. We have initiated multi-tiered reviews and associated governance organizational structures to assess systems engineering implementation within a program and across interrelated DISA programs, and to verify compliance in both areas from an end-to-end global information grid perspective. The CAE has already established joint program reviews, supported by the systems engineering organization, that address both acquisition-focused and engineering-focused topics. Quick-look technical assessments are being conducted for each program/project to identify best practices and recommended areas for improvement. Event-driven peer reviews are being initiated to focus on areas where it is deemed that further review is necessary.

Sharing Best Practices and Lessons Learned

We require all mandatory systems engineering artifacts to be posted on the DISA intranet so they are accessible across the agency. This practice improves efficiency by allowing managers and engineers to review and reuse relevant data and methodologies. It can also lower risks by ensuring cross-program consistency and preventing repetition of past mistakes.

Measuring Success

No process is complete without tracking progress and measuring the extent to which objectives have been achieved. We have defined systems engineering metrics in alignment with DISA's agency-wide balanced scorecard initiatives. Systems engineering-specific balanced scorecard metrics address such areas as posting mandatory artifacts, sharing best practices, conducting independent technical assessments, and meeting schedules. We require these and other related metrics to be reported to management on a quarterly basis.

Rebecca Cowen-Hirsch, *deputy component acquisition executive*;
Rebecca Harris, *principal director, Global Information Grid Enterprise Services Engineering*; and **Dave Mihelcic**, *chief technology officer*

Applying Systems Engineering to IT at the DLA

Since 1999, the Defense Logistics Agency has been dedicated to a transformational effort to re-engineer its business practices in response to changing warfighter logistics needs. Currently implementing a number of commercial off-the-shelf (COTS) programs, including a major enterprise resource planning system, DLA is at the forefront of business systems acquisition and is creatively applying systems engineering approaches to information technology (IT) programs through a tailored business systems engineering approach.

Though—as with any major acquisition program—the foundation for DLA's approach to business systems engineering is the defense acquisition system, the agency has developed a structured and repeatable business systems engineering process in reaction to several DoD- and congressionally mandated initiatives to improve the man-

agement and delivery of information technology programs. Guiding this process from desired capabilities to IT business solution implementation, DLA relies on best industry COTS solution-integration practices, which are now being embedded, along with other best practices, in the Logistics Domain-sponsored “Enterprise Integration Toolkit,” which can be found at <www.eitoolkit.com>. As DLA has discovered through the application of these business systems engineering principles within its business systems modernization program, COTS-based IT programs must rely on a disciplined but timely life-cycle process that maximizes best business practices and the lessons learned from large-scale COTS-based implementations in industry.

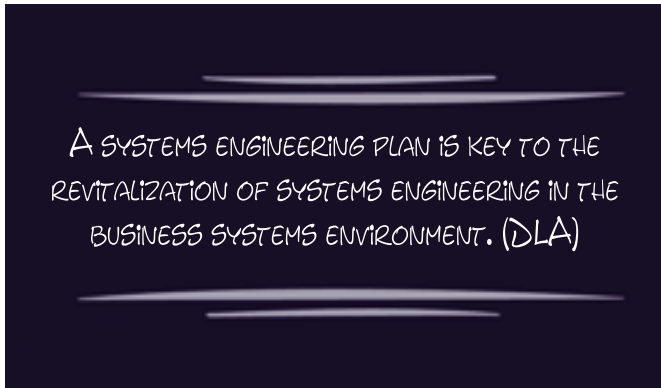
Leveraging Industry Best Practices

The following examples illustrate a few of the best industry practices used by DLA as it applies business systems engineering principles to introduce its new COTS-based business systems environment.

DLA partners with a leading practitioner from industry, whose technical expertise and integration experiences reduce implementation risk and provide the capability to maintain pace with the rapid changes in COTS technology. A critical element of the business systems engineering approach is the requirement for technical reviews directed at data integrity and data quality.

DLA ensures compliance with the enterprise architecture and supporting architecture artifacts. The systems, technical, and operational architecture views take on an extremely important role in the design and implementation of business systems. This, combined with functional requirements traceability, ensures that the technical solution can provide required capabilities in a “to-be” environment at every level of the enterprise. The revitalization of systems engineering with the focus on the technical management of business systems will contribute to defining the net centrality, interoperability, and business enterprise architecture compliance processes and criteria that are currently evolving.

DLA employs incremental and spiral development approaches within the business systems implementation environment. In many cases, the full functionality of the COTS-based system is implemented with the first release but deployed to a limited number of users or a manageable segment of the business. Future increments do not add functionality but are directed at increasing the number of users or business volume. This results in the identification of needed improvements or enhancements to ensure compatibility with the business environment. The identification of functional requirements may be defined in phases as technology matures or as the benefits of technology are better understood. This leads the program towards a spiral development approach.



A SYSTEMS ENGINEERING PLAN IS KEY TO THE
REVITALIZATION OF SYSTEMS ENGINEERING IN THE
BUSINESS SYSTEMS ENVIRONMENT. (DLA)

We make optimal use of testing and evaluation processes to reflect the inherent differences in a COTS-based system environment. COTS testing is focused on operational assessments, followed by formal initial operational test and evaluation once operationally ready. The test strategy is tailored to fit the risk and complexity associated with the business systems solution and incremental and spiral development approaches.

A systems engineering plan is key to the revitalization of systems engineering in the business systems environment. The documented technical management approach within the business systems engineering process addresses the risks and concerns surrounding business systems programs and provides the tailored approach to effectively manage, design, test, and deploy critical business systems solutions.

Continued emphasis on institutionalizing these business systems engineering principles is a DLA priority as the agency acquires and introduces more and more COTS-based business systems. These principles, as well as the other best practices embedded in the EI Toolkit, continue to blend DoD-unique best practices with the best business practices of industry. The result will be a continuing enhancement of defense acquisition system processes to reflect the unique characteristics of IT and business system acquisition.

David J. Falvey, program executive officer, information operations

Reinvesting in Systems Engineering in the Department of the Navy

Since the end of the Cold War, more than 75 specialized defense firms and/or divisions have merged into five major contractors. Consequences of this consolidation were the breakup and realignment of experienced engineering teams and processes, and the loss of systems engineering expertise as a result of retirements and downsizing. Meanwhile, the government downsized functions viewed as ancillary (that is, considered as overhead) to the Services' mission of winning wars. Therefore, revitalization and reinvestment in systems engineering are necessary prerequisites for the challenge of specifying, designing, and fielding the systems that must operate in the networked family-of-systems/system-of-systems (FoS/SoS) environment of the transformed forces of the future. This will include introducing new processes and tools that scale up to globally distributed systems and identifying the people needed to implement and lead systems engineering efforts in both government and industry. That revitalization is under way across Navy and Marine Corps programs at three levels: traditional systems developed by program managers; Navy and Marine Corps FoS/SoS programs that are not under the purview of a single program executive office; and at the international partner coalition level. This section of the article addresses the first two.

A PROCESS AND ORGANIZATIONAL FRAMEWORK
WAS DEVELOPED TO DESIGNATE INDIVIDUALS
WITH SUBJECT MATTER EXPERTISE TO CERTIFY THAT
AIRCRAFT, SHIPS, SUBMARINES, CRAFT, AND
AIRCRAFT SYSTEMS AND WEAPONS ARE SAFE
TO OPERATE. (DON)

Revitalization at the Core Program Level

The Department of the Navy (DoN) acquisition community has organized around the engineering challenges and design practices that are unique to ships, submarines, aircraft, and land units, and to the command, control, communications, computers and intelligence (C4I) infrastructure that brings them together as a cohesive fighting force. Responsibility for gaining and retaining corporate knowledge, the technical expertise, and tailored systems engineering practices is assigned to seven systems commands and their associated program executive offices (PEOs) and program managers. In 2002, the concept was adopted of a virtual systems command that incorporates a systems engineering stakeholder group to efficiently integrate systems engineering processes between the SYSCOMs. The stakeholder group is pursuing a number of systems engineering revitalization initiatives, a few of which are described here.

Naval Systems Engineering Guidebook

A Naval systems engineering guidebook was developed to document a common systems engineering process. It leverages industry and government best practices and documents the critical systems engineering processes typically associated with acquisition programs.

Aviation Ship Interface Specification Guide

A joint-Service specification guide on air vehicle/ship integration is being developed. It will enable future shipbuilders and aviation equipment suppliers to develop more robust and complete specifications, thereby aiding systems engineering by allowing more effective aircraft integration into ships.

Naval Systems Engineering Technical Review Process

A new systems engineering technical review process instruction has been issued to define processes and requirements for engineering reviews and to provide associated tools and instructions for consistent risk management.

Naval Technical Authority

A process and organizational framework was developed to designate individuals with the requisite subject matter expertise to certify that aircraft, ships, submarines, craft, and aircraft systems and weapons are safe to operate. This framework assigns authority, responsibility, and accountability, and it implements formal procedures to train, certify, and warrant individuals in defined technical domains to participate on PEO and program manager systems engineering teams.

Investing at the Family-of-Systems/System-of-Systems Level

The Naval capabilities evolution process (NCEP) has been created to apply the principles of systems engineering at the FoS/SoS level to transform from requirements-based to capability-based acquisition. The NCEP implements a mission-oriented, capability-based acquisition approach to engineer and field Navy and Marine Corps combat, weapon, and C4I systems that must operate as an FoS or SoS to deliver and evolve capability. Systems engineering integrated product teams are formed to derive, allocate, describe, and document system performance and interfaces among the FoS/SoS programs in a system performance document.

The NCEP includes three sub-processes—capability evolution planning, the capability engineering process, and the portfolio execution process—and key activities.

The capability evolution planning process supports the pre-Milestone A activities. It addresses the creation of acquisition portfolios for FoS/SoS systems engineering and for identifying the initial system functional and performance allocations, and the interface relationships among the portfolio systems. This process creates the capability evolution description of warfare system capability increments and fielding plans based on the planned evolutionary development of portfolio systems.

The capability engineering process supports the pre-Milestone B activities. Systems engineering principles are applied to perform detailed functional and performance analyses and design synthesis at the FoS/SoS level to refine performance allocations, and to identify key system interfaces and integration and interoperability requirements among portfolio systems. The product of the capability engineering process is the system performance document to be used by acquisition portfolio program managers for defining their programs.

The portfolio execution process also supports the post-Milestone B activities. It involves continuously monitoring the execution of acquisition portfolio programs to ensure that the desired capability is being evolved according to the capability evolution description, the system performance document, and the direction provided to individual pro-

grams. The portfolio execution process recommends courses of action to investment decision makers based on changes that occur to one or more portfolio programs.

Approval of each initial capabilities document or capability development document that affects an FoS/SoS-delivered capability should trigger an iterative pass through the NCEP. For those systems that support multiple missions, the NCEP activities will be performed for each mission or warfare system that is affected.

Carl R. Siel Jr., *ASN (RD&A) chief engineer*

Making Systems Engineering the Cornerstone at NGA

Revitalization of systems engineering is the cornerstone of activities to improve the acquisition management capabilities at the National Geospatial-Intelligence Agency. As NGA continues to acquire more complex systems and services, the importance of having a world-class acquisition workforce is paramount. Since January 2000, NGA has been conducting activities focused on improving the proficiency of the acquisition workforce and the policies and practices they use. All efforts are showing success in improving acquisition agility and programs' success, and—most important—delivering systems, geospatial-intelligence, and services of higher quality to NGA's customers.

The basis has been defining new systems engineering and program management processes and improving existing processes within the Acquisition Directorate. Using the Federal Aviation Administration Integrated Capability Maturity Model as the reference model, 10 process areas were identified as critical to NGA's efficient and effective execution of acquisition management. Under the senior sponsorship of William Allder and Jaan Loger, former directors of acquisition, and led by the systems engineering process group, eight process working groups melded existing activities with industry best practices then documented and implemented repeatable processes to yield predictable positive results. Once implemented and institutionalized, the processes have yielded good results. Development and delivery schedules and customer satisfaction across the life-cycle activities improved, with fewer heroics.

While the original goal was to improve practices commensurate with Capability Maturity Level 2, a formal external appraisal conducted in October 2003 using a continuous representation model, found eight process areas at Level 3, one at Level 2, and one at Level 1. Process improvement proceeds with continued institutionalization, development of new processes, and implementation of some processes across the entire agency.

Systems engineering revitalization was expanded to include NGA's joint systems engineering work with one of

AN IMPORTANT ELEMENT IN REVITALIZATION HAS
BEEN THE ACQUISITION MANAGEMENT EDUCATION
PROGRAM. (NGA)

its mission partners. Based on several NGA processes, joint systems engineering processes and a joint systems engineering management plan were collaboratively developed and implemented. These processes reflect the integrated and collaborative practices essential when working in a complex joint environment. Since November 2002, the use of these processes and joint systems engineering forums has reduced program risks.

Workforce Education: Critical to Revitalization

An important element in revitalization has been the acquisition management education program. To continuously improve the quality of the acquisition management workforce, in addition to Defense Acquisition University courses, NGA's Acquisition Management Professional Advisory Board and NGA senior leadership sponsor and fund several professional and personal development opportunities. The opportunities focus on improving the systems engineering, program management, and leadership competencies necessary for successful program execution. Partnering with The George Washington University and the University of Missouri-Rolla, NGA offers a two-year, on-site program towards a systems engineering graduate certificate to all civilian and military employees, contractor partners, and other government agency partners. Certificate graduates can go on to complete the final six classes in the NGA-sponsored master's degree program.

These on-site courses provide depth in particular areas of systems engineering and program management important in NGA's systems development, and they strengthen the students' discipline, efficiency, and effectiveness. Since February 2001, 76 students have received their systems engineering certificates, and the first master's program class of 18 graduated in April 2005. The seventh certificate cohort began in January 2005, and a second master's cohort is planned for the fall.

Developing Leadership

Strong leadership skills are also essential to developing successful systems engineering and acquisition management professionals overall. Based on a very successful leadership development program started in 2001 for NGA's contract management personnel, the Acquisition Leadership Development Program (ALDP) began in January 2004 for Acquisition Directorate systems engineers and program managers who demonstrated leadership

potential. In December 2004, the first ALDP class of 25 students and third class of 21 contract managers graduated. ALDP 2005 began in January and incorporates improvements recommended by the first class and senior leadership.

To supplement ALDP and other leadership courses is a shadowing program in which junior personnel are paired with NGA and non-NGA senior leaders. Shadows spend one week observing and often participating in senior leadership activities.

NGA remains committed to improving the quality of its acquisitions, in part through the continuing improvements in the conduct of systems engineering practices and acquisition management overall. We will continue to place great emphasis on the professional development of the workforce and the means whereby members fulfill their individual missions and that of the agency.

Dr. Thomas H. Holzer, *acquisition engineering technical executive*

Institutionalizing Systems Engineering and Architecture Throughout Cryptologic Activities at the NSA/CSS

On April 11, 2003, the National Security Agency director established the position of chief systems engineer, National Security Agency/Central Security Service (NSA/CSS), combining within it the unified cryptologic architecture and NSA/CSS systems engineering authorities. This position represented a milestone in institutionalizing systems engineering and architecture (SE/A) discipline and rigor throughout cryptologic activities and implementing the DoD systems engineering policies and directives.

Maturity on Multiple Fronts

There are five major aspects to the NSA/CSS systems engineering program: processes; architecture; SE/A analyses; integration analysis and support; and planning and resource (financial and personnel) management.

All major policies/directives are in place, with processes being implemented: deployment management; systems engineering; software engineering; configuration management; test and evaluation; modeling and simulation; and strategic enterprise management.

NSA/CSS systems engineering processes enable the broad-reaching, scalable implementation of systems engineering and decision support throughout the extended cryptologic enterprise. An overarching systems engineering policy is in place, providing the authority and responsibility for implementing SE/A. Additional policies enable implementation of configuration management, modeling and simulation, and deployment management processes. Configuration management and deployment management

offer critical support to acquisition efforts, facilitating interface definition, integration, and gap analysis.

NSA/CSS systems engineering is also an integral component in numerous agency executive management activities and associated processes/policies. These include test and evaluation policy and document coordination; NSA/CSS strategic integration management process (providing information and objective assessments regarding capability gaps, analysis of alternatives, and cost estimation); and acquisition processes (providing systems engineering program-level support and documentation development/review).

NSA/CSS systems engineering is a transition partner with Carnegie Mellon University's Software Engineering Institute and its work on the capability maturity model integration. Internally, NSA/CSS systems engineering sponsors formal CMMI training and a broad systems engineering training program curriculum. Further, the agency has nurtured two employees through extensive training and hands-on performance, leading to their becoming authorized CMMI lead appraisers.

Unified Cryptologic Architecture

The unified cryptologic architecture and its constituent components represent a consistent organizing framework of information that provides enterprise context, constraints, and interface guidance (over time) to management, developers, and users.

Today's intelligence issues require extensive interoperability, data exchange, and collaboration. The complexities among the various Intelligence Community and DoD agencies create problems. The unified cryptologic architecture and NSA/CSS enterprise architecture combine established standards, an interface tree, a common service taxonomy, a data model, and DoD architectural format products to facilitate interoperability.

Broad Support Functions

NSA/CSS systems engineering provides direct support to the agency's acquisition programs. ACAT I programs have forward-deployed systems engineering personnel reporting

to the program managers but also matrix-managed by the chief systems engineer. Thus NSA/CSS systems engineering policies, processes, and directives are institutionalized within major development efforts.

NSA/CSS systems engineering has a critical corporate-level role in addition to direct acquisition support, participating in the program planning and budget and execution process and identifying the need for new acquisition efforts, rather than simply supporting acquisitions already under way. NSA/CSS systems engineering reviews all program documentation and has signature authority on the systems engineering, information support, and test and evaluation management plans.

NSA/CSS systems engineering manages the evolution of the NSA/CSS cryptologic systems baseline, ensuring smooth integration of new capabilities into operations and adherence to the DoD online standards. Using a network of systems engineering personnel strategically placed within major programs and organizational elements, combined with key infrastructure/information management artifacts (such as corporate data repositories and an enterprise-integrated master schedule), NSA/CSS systems engineering performs integration planning and analysis across the breadth of acquisition activities.

Planning and Financial Management

The unified cryptologic architecture provides a common platform for resource planning, coordination, and alignment among the unified cryptologic system partners. The *FY2006-2011 Cryptologic Planning and Programming Guidance* is updated yearly and focuses the extended enterprise on key issues to facilitate interoperability and integration among the partners.

Within the agency, the NSA/CSS chief systems engineer participates in the corporate planning process. In addition to examining agency activities across the board to ensure cost and integration realities, the chief systems engineer also performs the planning and financial management for systems engineering activities throughout the agency's global enterprise.

NSA/CSS has made significant progress in capturing the collective corporate knowledge, documenting the future vision, and establishing policies/directives required to effectively system engineer the evolution of the cryptologic technical baseline.

Kelly A. Miller

SYSTEMS ENGINEERING PROCESSES ENABLE THE
BROAD-REACHING, SCALABLE IMPLEMENTATION OF
SYSTEMS ENGINEERING AND DECISION SUPPORT
THROUGHOUT THE EXTENDED CRYPTOLOGIC
ENTERPRISE. (NSA/CSS)

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Auditors Don't Inspect and Inspectors Don't Audit

Comparison of the Naval Audit Service and Naval Inspector General Functions

Richard Leach ■ Vice Adm. Ronald Route, USN

With an annual budget of over \$120 billion and an active workforce of more than 700,000 military and civilian personnel spread around the world, the Department of the Navy needs a system of oversight that addresses the complexity and magnitude of the organization. This oversight is provided through the work of the Naval Audit Service and the Office of the Naval Inspector General.

The Naval Audit Service and the Office of the Naval Inspector General both pursue similar organizational goals: to ensure that the Department of the Navy's people and resources have the best stewardship.

Though their missions differ, the two organizations share similar goals. Both work to assure that Department of the Navy resources are used efficiently and effectively and that DoN actions comply with laws and regulations. Both organizations support the DoN's mission and the people who carry it out. Both are oversight organizations, but each has unique roles and provides different—but complementary—services to Department leadership. However, because their goals are similar, the differences between management approaches, methodologies, and outputs of the two organizations sometimes become blurred, even in the eyes of senior DoN officials.

What's the Same and What's Different

So what *are* the similarities and differences? The unique role of each organization is established by public law. Title 10 U.S. Code, section 5014, requires that the Office of the



Leach has served as auditor general of the Navy since May 2000. He served in the Navy from 1968 to 1972, receiving the Navy Achievement Medal. He has over 30 years' civilian service with the Audit Service and the DoD Office of the Inspector General. **Route** is the Naval inspector general. He is a 1971 United States Naval Academy graduate. Route commanded George Washington (CVN 73) Battle Group, Navy Warfare Development Command, and served as the president of the Naval War College.

Secretary of the Navy have sole responsibility for auditing within its own office, the Office of the Chief of Naval Operations, and the Headquarters, Marine Corps. The Naval Audit Service is entrusted by the secretary of the Navy to provide independent, professional internal audit services that assist Navy leadership in improving efficiency, accountability, and program effectiveness. Title 10 specifies that the head of the office established by the secretary to conduct the auditing function (the auditor general of the Navy) have at least five years of professional experience in accounting or auditing. The auditor general is considered to be a career-reserved position as defined in section 3132 (a)(8) of Title 5, U.S. Code, and the law prohibits members of the armed forces on active duty from holding any supervisory positions in auditing.

The Naval Audit Service accomplishes its mission by performing internal audits of Department of the Navy organizations, programs, activities, systems, functions, and funds. These audits evaluate whether:

- Navy information is reliable
- Resources have been safeguarded
- Funds have been expended consistent with laws, regulations, and policies
- Resources have been managed economically and efficiently
- Desired program performance has been achieved.

The Office of the Naval Inspector General is also cited in the same section of Title 10 as a unique function within the Office of the Secretary of the Navy charged with:

- Inquiring and reporting on matters affecting military efficiency or discipline
- Proposing a program of inspections
- Making inspections, investigations, and reports as directed by the secretary of the Navy or the chief of Naval Operations
- Cooperating fully with the inspector general of the Department of Defense.

The Naval Audit Service

The Naval Audit Service is a professional audit organization. By law, the auditor general is a career civil servant who reports directly to the under secretary of the Navy in order to establish and maintain impartiality. The Naval Audit Service's main products are the services represented by its audit and other reports. Its work is held to professional standards equivalent to those required of private-sector auditing firms. Government auditing standards are issued by the comptroller general of the United States in what is commonly referred to as the "Yellow Book." The standards impose a quality discipline on audit products to ensure that results are accurately reported and that audits are conducted in such a manner that their conclusions can be duplicated by an impartial third party following professional accounting standards. The audit culture is driven by the desire to provide DoN leadership with

the most reliable information, including disclosing information or situations of which leadership may not have been aware so that informed decisions can be made.

There are 350 professional staff in the Naval Audit Service, all of whom hold recognized professional qualifications for education and experience, including a bachelor's degree (or higher) and accounting and business training. Many hold one or more external professional certifications and DoD auditor certifications. All auditors must maintain the currency of their skills through required annual continuing professional education.

Audits

An average audit is planned to take approximately nine months with a staff of four or five auditors and consists of an intense examination of processes, policies, and outcomes. Audit reports document the services provided by the Naval Audit Service. Each report summarizes a situation that requires leadership's attention, explains the root cause(s) of the situation, and recommends potential solutions. The report also discusses the criteria against which the situation was examined. The service provided by the auditors is the sum of the professional rigor associated with the design of the audit approach; the collection, organization, and analysis of data; and the impartial reporting of significant information and formulation of recommendations to the level of management that is best able to take effective action.

Auditors' primary approaches to obtain supporting evidence for audit results, conclusions, and recommended solutions are to test documentary files and records, analyze management and program data, and make direct observations. The report is supported by work papers that describe the approach, contain the information and its sources, document the data collected, and describe the analyses performed in such a manner that a third party could verify the information and would likely arrive at the same conclusions based on the evidence.

Based on their work, auditors may certify or attest to the accuracy of data or to the assertions of management. The work and opinion of auditors, within the bounds of their profession and, when appropriate, in court proceedings, carry recognized legal weight.

The Office of the Naval Inspector General

Title 10, USC, establishes the Naval inspector general as "the senior investigative official in the Department of the Navy (DON) and the principal advisor to the Secretary, Chief of Naval Operations (CNO), and Commandant of the Marine Corps (CMC) on all matters concerning inspections and audit followup with particular emphasis on those matters relating to DON integrity, ethics, efficiency, discipline, or readiness, afloat or ashore." This flag officer is assigned by the secretary of the Navy to inquire

and report on matters affecting military efficiency or discipline, propose programs of inspection, and conduct inspections and investigations as directed by the secretary or the chief of Naval Operations.

The functions of the Office of the Naval Inspector General include investigations that result from hundreds of hotline complaints and congressional inquiries. Inspections are a combination of area visits that cut horizontally across all commands in a geographic area, command assessments on Echelon II commands, and special focus studies that delve into specific areas of interest/concern to Department leadership. Oversight responsibilities include review of Judge Advocate General Manual investigations as well as intelligence and special program oversight reviews. Additionally, the Naval Inspector General Office is tasked with conducting audit evaluation and follow-up, and other support efforts. The Office of the Naval Inspector General is staffed by 29 military and 49 civilian employees.

The Naval Inspector General Inspections Division is the lead directorate for the assessment and inspections processes, and is composed of fleet-experienced officers from each warfare area—aviation, submarines, surface warfare, aviation maintenance, information technology, and manpower—bringing an operational perspective to the assessment process that requires minimal time to ramp up on issues before an inspection.

Inspections

Naval Inspector General Command Inspections are conducted on 31 Echelon II commands (e.g., commander, U.S. Pacific Fleet and commander, Naval Air Systems Command) on a periodic cycle with a goal of inspecting all Echelon II commands every four years.

Command inspections begin with a command-generated self-assessment. The self-assessment is a compilation of the command's mission (all processes), how process effectiveness is measured (metrics), and a discussion of specific risks/material weaknesses. The Naval Inspector General is currently implementing an electronic self-assessment tool for commands to tailor to their mission/processes. Once the self-assessment is reviewed, the Naval Inspector General team will conduct an extensive on-site visit (as necessary) to further assess the command's processes/risks.

Area visits generally cover a specific geographical area and focus on evaluating specific functions within the Department of the Navy, cutting across claimancy, fleet, and command lines to identify systemic DoN-wide issues and evaluate selected risks to the Department. These assessments look at a variety of areas including mission readiness; anti-terrorism/force protection; quality of life/service; morale, welfare, and recreation; facilities; housing;

Both organizations support the Department's mission and the people who carry it out. Both are oversight organizations, but each has unique roles and provides different—but complementary—services to Department leadership.

environmental, safety/occupational health, medical/dental; safety; Commissary/Navy Exchange; and command climate. A typical visit will entail a wide-ranging command climate survey, focus groups, and leadership interviews. Ultimately, the team will assess the major issues and risks present across the area.

Special focus studies are done at the request of the chief of Naval Operations/vice chief of Naval Operations on an emergent basis. They are an in-depth review of a particular issue or concern. The Office of the Naval Inspector General will typically conduct two or three special studies per year. Recent studies include the Navy-wide drug abuse and prevention, and sexual assault studies. These studies are typically conducted by three- to five-person teams and often take from three to five months to complete.

Naval Inspector General methodology for command inspections and area visits is to gather information based on personal interviews, surveys, focus groups, and command self-assessments; and to assess the information based on staff knowledge of the Navy and personal experience. By this method, the Inspector General develops issues for reporting and correction. It is important to recognize that there is no set "standard" assessment or area visit. The inspections and area visits are broad and gather information in the context of the command or area. The process relies on a comparison of existing policy/data and testimonial evidence (although not exclusively so) and often upon the integrity and forthrightness of Naval officials and personnel. It is an expedient and relatively fast method for identifying systemic Navy problems and invariably identifies issues that turn out to be significant.

The Inspections Division at the Office of the Naval Inspector General has a staff of 10 Naval officers with broad

Continued on page 26

RFID Vision in the DoD Supply Chain

Alan Estevez

Today's U.S. military is a dynamic, rapidly moving force designed to be effective in an asynchronous battlespace. The enhanced mobility and speed of a combat force capable of performing in austere theaters with limited infrastructure creates a new class of challenges for military logisticians. The performance of logistics during the combat phase of Operation Iraqi Freedom created a compelling case for change to fast, accurate, flexible, and mobile sustainment support.

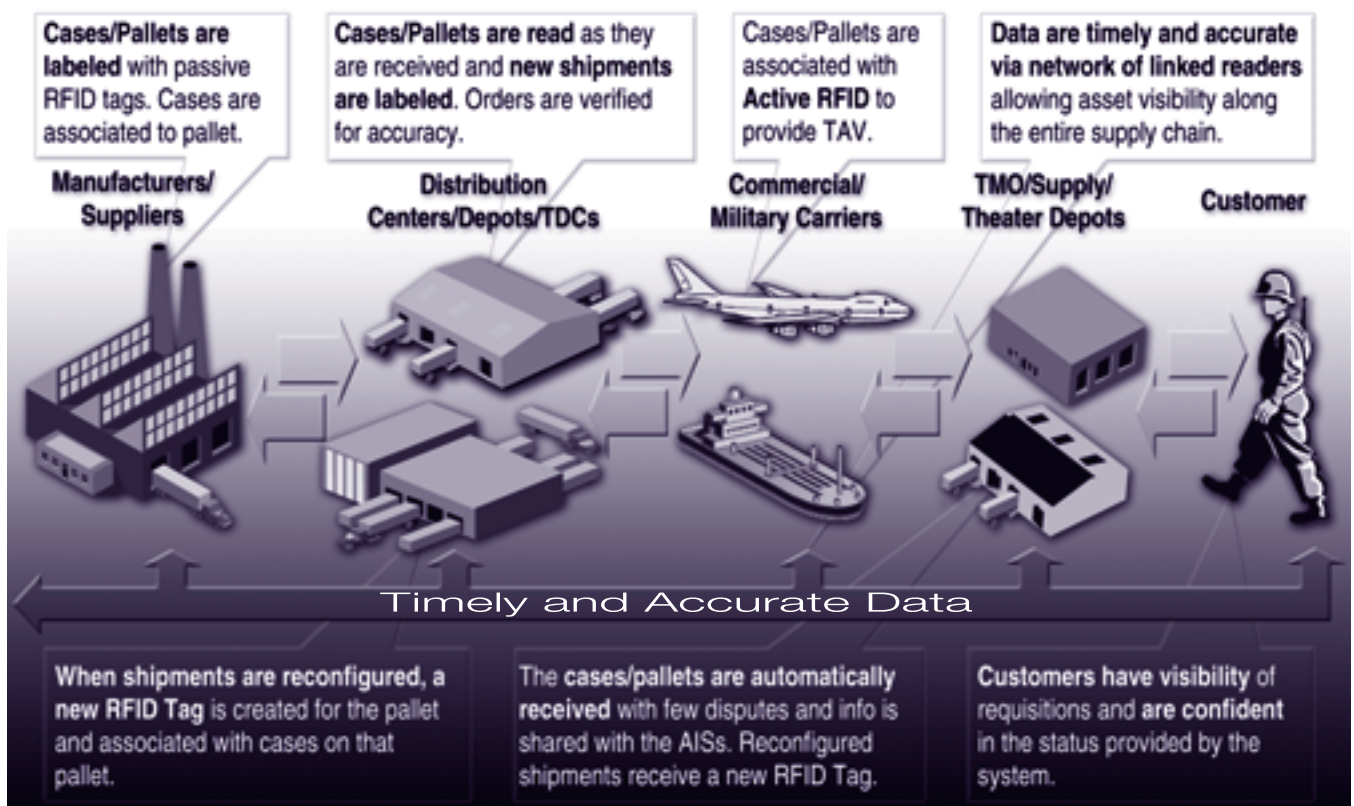
Historically, military logisticians supported the warfighter with limited information on assets, particularly in theater. This obstacle led to ineffective inventory management, introducing waste, inefficiency, and delay across the supply chain. Ultimately, these shortfalls impacted the warfighter's overall materiel readiness, the ability to close the force, and the operational availability of weapon systems. The lack of synthesized end-to-end, real-time theater information on assets (including both at-rest and in-

transit items) across all components, undercuts the ability of the combatant commander (COCOM) to exercise directive authority for logistics.

The bumper-sticker thought that is frequently used to refer to this issue is "visibility," but visibility is not an end in itself. Visibility is a tool to achieve specific outcomes in support of the following objectives:

- Reliably deliver the required item to the right location in the correct quantity at the time required from the most appropriate source
- Make available tools and information for decision makers to exercise effects-based management of the logistics network
- Manage end-to-end capacities and available assets across the end-to-end chain to best support warfighter requirements
- Promote the ability of the supported COCOM to effectively exercise directive authority over logistics.

FIGURE 1. Defense Department RFID-Enabled Supply Chain



Estevez is assistant deputy under secretary of defense, supply chain integration

The Enabling Technology: Radio Frequency Identification

Radio Frequency Identification (RFID) is an enabling technology that will allow military logisticians to create synthesized and integrated end-to-end information on assets.

The Department of Defense is already a globally sophisticated user of active RFID, with over a decade of experience in the technology and the most extensive network in the world. Now the DoD is standardizing the use of active RFID and moving ahead with the application of passive RFID technologies. In 2004, the acting under secretary of defense for acquisition, technology and logistics issued a policy requiring the implementation of RFID across the DoD. The Department of Defense is taking a leadership role in passive RFID, both as an early adopter of the technology and by driving the development of the technology and standards.

The policy directs military services and defense agencies to immediately expand the use of high data capacity active RFID currently employed in the DoD operational environment. The policy also directs the phased application of passive RFID by DoD suppliers who will be required to put passive RFID tags on the cases and pallets of materiel shipped to DoD as well as the packaging of all items requiring a Unique Identification (UID). Beginning in 2005, DoD suppliers will be required to apply passive RFID on shipments of selected classes of supply going to the Defense Distribution San Joaquin, Calif., and the Defense Distribution Susquehanna, Pa. Further classes of supply and nodes will be added over the next several years, with full implementation expected by 2008.

DoD's Vision for RFID

The end state for the DoD supply chain is to be a fully integrated adaptive entity that leverages state-of-the-art enabling technologies and advanced management information systems to automate routine functions and achieve accurate and timely in-transit, in-storage, and in-repair asset visibility with the least human intervention. RFID is a foundational technology on the path to achieving this vision. DoD will ultimately operate a single, seamless, responsive enterprise visibility network, accessible across the backbone and usable by people and systems across the end-to-end supply chain. As a starting point, the DoD vision is for RFID to facilitate accurate, hands-free data capture in support of business processes in an integrated DoD supply chain enterprise as an integral part of a comprehensive suite of automatic identification technology (AIT) applications that DoD will leverage, where appropriate, in the supply chain to improve warfighter support, as depicted in Figure 1 on the previous page.

Clearly not all DoD logistics supply chain operations are captured in this picture. However, the primary actions

performed by the physical nodes to move materiel through the logistics chain are the shipping/receiving/transportation processes. Figure 1 shows materiel movement that physically "touches" each node throughout the logistics path. But materiel can start, end, and move through different paths between logistics nodes: manufacturers/suppliers to defense distribution center for stock replenishment; defense distribution center to supply depots/theater distribution center for stock replenishment outside the continental United States; defense distribution center to supply depots for stock replenishment in the continental United States; supply department/theater distribution center to customer; direct vendor delivery.

All these segments are impacted by RFID. Materiel movement includes moving retrograde back through the supply chain in the opposite direction. RFID (active and passive) read and write capabilities will be required at the farthest point in the supply chain delivery system to support retrograde. The return/retrograde process is the same as the shipping process.

With passive RFID, DoD will capture more granular data automatically, injecting advanced technology at the transactional level. This foundation will streamline the movement of materiel through warehouses and depots, increase inventory accuracy, and generate productivity improvements. Active RFID is a cargo-tracking capability and provides the ability to manage consolidated shipments. With the addition of passive RFID to the technology portfolio, the military is developing an end-to-end capability relying on complementary active and passive technologies to deliver an RFID suite applicable to all inventory—in-transit, in-process, or on the shelf.

Historically, information across the supply chain has been captured only at the predefined nodal touch points. The data capture has generally been used to update systems of record and in some situations, to generate status notifications. To speed the adoption and implementation of passive RFID technologies and accelerate the learning curve, components are initially using passive capabilities for transaction sets similar to (and sometimes identical to) legacy transactions. However, once the foundational implementations are established, the true promise of passive RFID may be realized. RFID delivers near real-time status, enables better inventory control (particularly in a deployed or combat environment), and can make track and trace around the world, across the silos, a reality.

No longer will the DoD be constrained to capturing information on at-rest and in-transit inventories at fixed locations. As RFID tagging becomes more ubiquitous and RFID technology more portable, real-time information can be captured wherever required to support the requirements of the COCOM. Equally important, the adoption of passive RFID standards will serve to undermine

the silos and barriers to information flow across and among the components that have historically been a challenge for the DoD. The military logistician will be able to deploy and move a logistics infrastructure and visibility capability as rapidly as the COCOM can deploy and engage the combat force.

RFID in the Bigger Picture of Automatic Identification Technology Apps

RFID is a part of a larger suite of AIT applications, all of which the DoD will leverage, where appropriate, in the supply chain. As an enabling technology, RFID data must be available to the automated information systems (AISs). To take advantage of the capabilities RFID provides, managers of all major logistics systems modernization programs will update appropriate program documentation to include the requirement for RFID capabilities as part of the system operational deployment in conformance with the business rules and initial timeline set forth in the DoD RFID Policy. Managers of major acquisition programs will update programs as required, including the requirement for RFID capabilities where applicable.

Active and passive RFID will continue to complement one another as passive RFID technology is implemented throughout the DoD. Many shipments moving through the defense transportation system are currently tracked using active RFID and a bar-coded military shipping label. The implementation of passive RFID will complement the current successes of active RFID for shipments outside the continental United States.

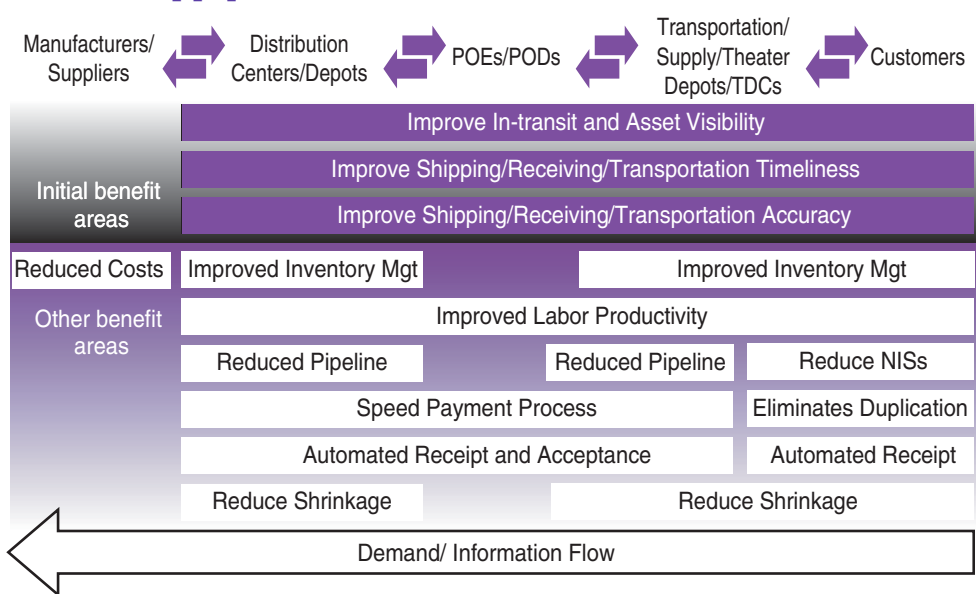
The association of a passive tag to an active tag will provide improved container stuffing and unstuffing time and improved accuracy to facilitate “inside the box/pallet/container” visibility. This passive and active association is created by building a “nested” structure of passive tags (UID item packaging, case and pallet tags) that are subordinate to the active tag (container and 463L pallet-level tags). Historically, active RFID has been excellent at providing nodal visibility. The implementation of passive tags provides efficient and accurate item and detailed content visibility. The marriage of active RFID with passive RFID will facilitate more accurate and timely automatic capture and reporting of data within the multiple layers of information required in DoD’s dynamic environment.

The Relation of RFID to UID

RFID deployment also complements the ongoing Unique Identifier (UID) initiative. While the UID and RFID initiatives are closely related, they have important fundamental differences. UID is a permanent, unambiguous, and globally unique identifier for an item. RFID is a means of collecting data using radio frequency technology. RFID will be used as a hands-free data collection method to identify UID items located within various levels of materiel packaging. In order to identify the UID item using RFID, the RFID tag data on the unit packs, shipping containers, exterior containers, and palletized unit loads must be associated to the UID information in a logistics system. Using RFID tags as a means of data collection and associating the tag data with UID information will help to maintain precise UID asset/in-transit visibility and to improve data quality, item management, and maintenance of UID materiel throughout the DoD supply chain. The hands-free data collection method will help extend and take advantage of the implementation of the UID policy. However, the UID initiative requires a data matrix be applied to each UID item. The data matrix is a two-dimensional barcode, an alternate form of AIT. The combination of 2D barcode and RFID technologies incorporated into AIT equipment will facilitate the UID and RFID relationship.

Because of the “nested” structural relationship that will result, it is envisioned that passive RFID will be used to verify contents, track physical movement, and virtually build the contents of a 463L pallet or SEAVAN container. Passive RFID will accurately verify, in real time, and communicate to the local AIS (and personnel physically loading the pallet/container) the contents of the 463L pallet or SEAVAN container. Once the pallet/container is properly configured, an active tag is attached to the 463L pallet or SEAVAN container to track and trace the trans-

FIGURE 2. High-Level Illustration of the Benefits of RFID Across the DoD Supply Chain



portation. At the final destination, when the pallet/container is unloaded, passive RFID will again verify the contents and track the physical movement of the materiel within the destination node. Additionally, this nested data will be used to create a transaction of record and close the transportation transaction once the items are received.

As stated before, RFID is part of a family of AIT devices that includes, but is not limited to, bar codes, optical memory cards, smart cards, micro-electro mechanical systems, and satellite tracking systems. RFID and bar codes will coexist for several years, as both technologies have their merits. However, RFID brings several benefits over bar codes:

- Eliminates human error
- Improves data accuracy/asset visibility
- Performs in rugged, harsh environments
- Allows for dynamic, multi-block read/write capability
- Facilitates source data collection
- Allows for simultaneous reading and identification of multiple tags.

The employment of RFID provides several benefits to the overall DoD supply chain. Figure 2 on the previous page identifies these potential benefits and the respective nodes.

DoD-wide Business Process Change

It is envisioned that each military service and defense agency will review its internal business processes to further refine the most appropriate employment of RFID. The widespread integration of RFID into the DoD business processes should be managed with the same level of attention as a major system fielding. Although this technology enables accuracy and timeliness of data within current and future systems of record, introducing RFID will require significant planning, equipment fielding, AIS changes, and training. The systems approach should be taken to ensure a long-term, fully integrated solution.

The real value of RFID lies not in what we know it can do today, but in uncovering what it will do in the future. DoD is in the midst of the most fundamental transformation of logistics capability ever attempted, and RFID is a foundational element. Through RFID deployment, DoD is laying a foundation that allows military logisticians to see an exciting capability—Web-centric logistical control—riding on new applications able to see and manage end to end not just the enterprise-centric silos managed by legacy approaches today, but factory to foxhole, delivering the right item to the right place at the right time, even in the face of rapidly evolving conditions in the battlespace.

fleet experience. Their knowledge and military experience is at the core of an inspection or area visit. Core staff are augmented with additional personnel from other divisions or commands, so an inspection or assessment team may eventually involve 20 to 30 people who may spend as long as two weeks on-site.

Special studies are different in that detailed fact gathering and analysis may be required to determine the scope and root causes associated with issues. Naval Inspector General special studies normally focus on examining specific issues and providing senior Department of the Navy leadership with findings and recommendations from an operational perspective. The investigative nature of Naval Inspector General reports calls for a wide latitude in the method of conduct for each study.

In conclusion, the Office of the Naval Inspector General is the “conscience of the Navy,” making a difference and adding value at all levels through assistance, advice, and advocacy.

Different Organizations, Common Goals

Auditors interview, but they use documentary data as the primary source of information on narrowly focused reportable issues. Audits verify and test documents, files, and records for accuracy. Auditors analyze data and make direct observations. Their reports are backed up by independently verifiable documentary evidence and analyses. Audit reports contain enough detail to identify and address root causes and to allow management to make informed decisions.

Inspectors also interview and look at data, but the primary source of their reports is human input on an all-inclusive range of issues. Their reports are backed up by their military experience and the integrity of their people. While inspectors can provide a quick look with broad coverage, they don’t have the resources to go into great depth. Inspectors raise issues and concerns from all levels up the chain of command, serving as an early-warning system that allows the Department to spot trends and address issues and problems early.

The Naval Audit Service and the Office of the Naval Inspector General are very dissimilar organizations and use different methodologies—but both pursue similar organizational goals: to ensure that the Department of the Navy’s people and resources have the best stewardship.

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The authors welcome comments and questions, which can be addressed to richard.leach@navy.mil.



From Our Readers

I enjoyed Owen Gadeken's article in the Jan/Feb 2005 *Defense AT&L* Magazine on "PM Leadership: Seven Keys to Success." He did a nice job of explaining the difference between leadership and management and the important role of PM as leader. I especially liked the "Developmental Model for a Successful PM" (figure 1 in the article), which was based on his PM interviews and surveys and showed leadership as the key element at the top of the pyramid.

I think it was Stephen Covey who said, "Managers manage things; leaders lead people." Great job on the article, and thanks for stressing this point so clearly.

I also enjoyed Dan Ward's article "It's Quitting Time" in the same issue. I'm a big fan of the Pareto Principle (the 80/20 rule). Thanks for illustrating it so clearly in the article. I also liked the book *Slack* and thanks for recommending that to readers too.

One of the challenges I have is which calls, e-mails, and meetings to ignore. While the call, e-mail, or meeting

itself may hold little value for me personally, sometimes you can build or improve a valuable networking relationship by responding to it.

Keep up the great writing!

Al Kaniss
Naval Air Systems Command

"It's Quitting Time" was great—superior delivery of the message! I'm a retired Air Force colonel, now overpaid consultant with time to read "other" material. Just getting through *Tipping Point*. I discovered several of your ideas late in my career, but not too late. I endorse all, and so do many whom I left behind to do more with less.

Nice job!

Greg Postulka
Dayton Aerospace, Inc.

CURRENTLY SCHEDULED DEFENSE ACQUISITION BOARD (DAB) MEETINGS

The following Defense Acquisition Board (DAB) meetings are scheduled through the first half of calendar year 2005. These meetings are subject to change. Check AcqWeb at <<http://www.acq.osd.mil/ara/dabs.htm>> for the most recent update.

- Land Attack Weapons Capability Area Review—May 2, 2005
- Electronic Warfare Capability Area Review—May 3, 2005
- CVN-21 Program Review—May 5, 2005
- JBMC2 Capability Area Review—May 17, 2005
- Future Combat Systems Program Review—May 26, 2005
- MPF(F) Milestone Decision Review—June 9, 2005
- Alliance Ground System Program Review—June 14, 2005
- Stryker Program Review—June 21, 2005
- Armed Recon Helicopter Milestone Decision Review—June 23, 2005

Defense Logistics Agency Designated Executive Agent for Critical Supply Chains

Claudia "Scottie" Knott



The Defense Logistics Agency has recently been designated the executive agent for several critical supply chains within the Department of Defense: bulk petroleum, medical materiel, and subsistence (food or food-related supplies, including bottled water). The EA designation to DLA for clothing and textiles and construction materiel is in the staffing process at press time and should be signed by Deputy Secretary of Defense Paul Wolfowitz in the next several months.

With this designation, DoD recognizes the commercial business practice of establishing supply chain managers as the key element to effective delivery of products and services to its customers. In this case, these customers range across a broad spectrum of activity and geography, from peace-time operations to warfare, in the continental United States and abroad.

DLA has designated specific field activities to fully execute its directed EA responsibilities: bulk petroleum by the Defense Energy Support Center; medical, subsistence, clothing and textiles, and construction by the Defense Supply Center Philadelphia. The commanders of these organizations, acting as supply chain managers, are responsible for identifying customer requirements and managing the industrial base to ensure product availability, as well as inventory management, storage, distribution, de-

“DLA must continue to evolve as DoD’s premier end-to-end supply chain integrator. We have become a national strategic asset providing ‘factory to foxhole’ management of consumable items, stock positioning and distribution services, reutilization and marketing services, and logistics information to a global deployed and deployable force.”

Vice Adm. Keith Lippert, USN
Director, Defense Logistics Agency

Knott is DLA component acquisition executive and deputy director of DLA's Logistics Operations Directorate.

livery, and ultimately, disposal of the items that fall under their responsibility.

Along with these tasks comes the responsibility for funding the activities. As with any effort this large, DLA must partner both horizontally and vertically with commercial and government organizations to fulfill its supply chain responsibilities. Supplier and customer collaborations are cornerstones to achieving high-performance results. Like their industry counterparts, DLA supply chain managers have entered into strategic partnerships with service providers in the industrial base, transportation industry, U.S. Transportation Command, and others. Additionally, partnerships with military customers are essential in determining the time-phased demand plans to meet operational requirements.

Aggressive planning with both customers and suppliers has allowed DLA to invest in inventories that have enabled logistics managers to support mission requirements throughout the world. These partnerships must be punctuated with service-level agreements specifically delineating performance objectives for each critical part of the supply chain. These objectives reflect routine operations as well as surge requirements for support of Operation Enduring Freedom in Afghanistan and Operation Iraqi Freedom.

"DLA must continue to evolve as DoD's premier end-to-end supply chain integrator," says Vice Adm. Keith Lipert, DLA director. "We have become a national strategic asset providing 'factory to foxhole' management of consumable items, stock positioning and distribution services, reutilization and marketing services, and logistics information to a global deployed and deployable force.

"This environment dictates that we adopt a robust business strategy that will allow DLA to build and deliver integrated, tailored logistics solutions crossing the operational spectrum from peace to war," he adds.

Adopting the commercial business model of supply chain management necessitated some transformation within the agency, including reorganizing into customer and supplier teams, implementing a state-of-the-art enterprise resource planning system, concentrating on enterprise process management and process improvements, and establishing supply chain metrics for internal performance and financial accountability. Because of the scope of the transformation, DLA also instituted a change management strategy led by advocates at all levels of management within the organization.

One of the key strategies that DLA has used in ensuring end-to-end support of its supply chains is the "rock drill." Rock drills are paper or tabletop exercises, conducted with all key supply chain stakeholders, that map out the

entire process flow from customer demand to fulfillment to disposal. The process will identify overlaps and/or gaps in the process, allowing the supply chain manager to pinpoint deficiencies in systems, processes, or policy. Gaps could be information gaps as well as distribution and delivery gaps. Information flow is an essential element in managing supply chains effectively and a critical enabler in managing an efficient supply chain with global reach.

At the conclusion of the exercise, gaps are identified and action plans (including funding) for correction are created and monitored. Additionally, overlaps are minimized to those necessary for planned redundancy. This technique is being applied to all of the EA supply chains for which DLA is responsible and will be the mechanism for identifying and communicating supply chain objectives to all stakeholders. It is also the mechanism to be used for identification of continuous improvement opportunities in the assured delivery of products.

"We identified and validated steps for action by the executive agent," says Air Force Lt. Col. Mike O'Connor, program manager for medical commodities. "We addressed several disciplines. In each case, we have people assigned to perform those duties, and they told us what an executive agent could do differently and better in each situation."

The designation of U.S. Transportation Command as the distribution process owner allows DLA and TRANSCOM the opportunity to more effectively collaborate in their respective roles of supply chain manager and distribution service provider. Synchronizing the flow of required supplies from factory to foxhole is clearly the logistics imperative, and these two organizations can ensure that the objective is met for the supply chains for which DLA has been designated EA authority. This includes in-theater support, as well as peacetime in-country operations.

The designation of supply chain managers within DoD marks a milestone in the accomplishment of one of the department's objectives: for the business operations of defense to become more efficient and effective. The challenge is large, but placing accountability for performance of a supply chain squarely in the hands of a single organization is a management principle that has demonstrated results in the commercial world. There is no reason to believe it won't have the same high-pay-off results in DoD.

DLA provides supply support, and technical and logistics services to the U.S. military services and several federal civilian agencies. Headquartered at Fort Belvoir, Va., the agency is the one source for nearly every consumable item, whether for combat readiness, emergency preparedness, or day-to-day operations. More information about DLA is available at <<http://www.dla.mil>>.

Quality Management — A Primer

Part I

Wayne Turk

According to the Merriam-Webster Dictionary, a primer is a small introductory book on a subject. I can't stretch this into a book, but it is the first of two articles on quality management. Don't expect articles on managing quality, although that will be touched upon, but accept them as an introductory text on providing quality project management. While they're aimed primarily at DoD software-related projects, most of the principles can be applied to any project. I hope it will provide a roadmap with some helpful hints for new project managers and food for thought for those who have been around for a while.

This is just a primer and doesn't have comprehensive coverage of any of the topics. So be prepared to do some research or ask questions of others for more detailed knowledge in any of the areas covered, plus any not touched upon.

Part I will focus on getting the project started, building the right team and the right team dynamics, and using good processes to end up with good, useful

products. Part II will focus on budget, schedule, contractor relations, and a slew of points covering the many and varied other parts of project management that you have to worry about—like communications, setting expectations, quality assurance, and testing, to mention a few that might whet your appetite.

Getting Started

One of the first steps is to assemble the project staff. It sounds simple, but there are many actions required, especially if this is a project that involves contractors. (The contracting actions are another article, so we'll bypass that and assume that the contract or contracts have been awarded.) As the project manager, you need to build a staff that can get the job done. You need the right mix of expertise, creativity, flexibility, enthusiasm, and experience. Don't forget the space and equipment that the staff will need to do their jobs.

In this age of contracting out functions that are not inherently governmental, many of your staff will probably be contractors. In the last half-a-dozen



As the project manager, you need to build a staff that can get the job done, and the right mix of expertise, creativity, flexibility, enthusiasm, and experience.

Turk is a retired Air Force lieutenant colonel and a project manager with SRA International, managing two National Guard Bureau information technology projects. He has supported projects for DoD, the military services, other federal agencies, and non-profit organizations and is a frequent contributor to Defense AT&L.

contracts that I have been involved with, as well as most of those that I am aware of, government and military staff were in the minority. In some cases, you might even have contractors helping to oversee the work of other contractors. While you should consider the contractors to be an integral part of the team, there are rules that must be followed. Your contracting people can educate you on those rules. I'll talk about contractor relations in Part II.

Determine what functions are needed and find the right people for the jobs. Among the slots that you might need to fill are:

- Program/project management support
- Subject matter expertise
- Quality assurance
- Risk management
- Logistics
- Testing
- Engineering
- Contracting
- Budget/financial management
- Configuration management.

This isn't an exhaustive list, which makes it sound as if you might need a cast of thousands—and for a large, multi-million dollar project you might. But for many projects, the same bodies can fill multiple roles, or you may have matrixed personnel. Many of your personnel decisions are going to be determined by your budget, so keep that in mind as you plan. Remember too, that as a project grows or changes during the life cycle, personnel requirements will change.

Gather, prioritize, coordinate, and validate the requirements for the project. Again, there are complete articles on requirements gathering, requirements writing, and requirements management (see "A Template for Success," *Defense AT&L*, March–April 2004). Good requirements are the basis for success in any project. Without them, you don't know what you're building or if it will be usable when you finish.

As a part of requirements gathering, there are usually other data to be acquired and reviewed—equipment information, user metrics, vendor data, and more. Make sure that the data collected are meaningful, useful, correct, and *needed*. It's easy to waste time gathering and reviewing information that is unneeded or not helpful—and it happens frequently.

Promote Positive Team Dynamics

You now have your team, and it's up to you to get them working together to get the job done right, on time, and within budget. The biggest help in overcoming the challenges of a project is good communication. Frequent and open communication is a necessity. This doesn't mean just within the team, but also with the future users, the

development contractors, points of contact within DoD or the Services, and those monitoring your progress.

Select the right person or group to accomplish any specific task. Once you pick the right one(s), ensure that they have a clear picture of what needs to be done. That means clear definitions, realistic expectations, and defined standards of quality. Too many times, a person gets a task, but the task comes without enough guidance. The person ends up doing what he or she thinks is needed, and that might or might not be right. When everyone has common understanding and expectations, it can save loads of time and money from delays or rework.

Schedule project reviews on a regular basis. Interim project reviews are a great tool for communications and even motivation. There are two types. One is the internal IPR for the team to share information with each other and the project manager. The other is for the project manager to share information with management and/or the customers.

Promote other good teamwork practices. These include good feedback loops, both internal and external; good documentation of plans, progress, and problems; ensuring that at least two sets of eyes look at every document; encouragement of creativity and flexibility; quick problem resolution at the lowest possible level; and a good capability for sharing files and data electronically.

All of this is just good common sense, but it's surprising how often these practices can be forgotten or missed. In the press of daily business, deadlines, and attending to the inevitable crises that arise, managers sometimes push good practices aside while they worry about whatever current fires they're fighting. But in the long run, that only causes more problems.

Products and Processes

The previous section leads right into this one: building and using good, strong, repeatable processes. Processes can make the pieces of the puzzle fit together easily. Knowing that things are done the same way every time gives the team and customer confidence that nothing is missed and that the results, whether a document, an action, or a product, are trustworthy, useful, and usable.

Begin with established government, DoD, Service, or agency standards and processes. They set the structure and baseline. There are many published processes within DoD that are excellent. But don't stop there. Look at other public- and private-sector ideas, standards, concepts, systems, benchmarks, and processes. The Government Accountability Office is a great source of information on government best practices. Don't reinvent when you can leverage on previously developed and proven work. Which processes and products you review and use will depend

Seventeenth International Defense Educational Arrangement (IDEA) Seminar



**June 6-10, 2005
To be held in
Berlin, Germany**

The Seventeenth International Defense Educational Arrangement (IDEA) Seminar will be hosted by the Bundesakademie für Wehrverwaltung und Wehrtechnik (The Federal Academy for Defence Administration and Military Technology).

The seminar will be a theme-based format, to include an industry day; will provide for your individual participation; and will provide you information exchange and feedback.

The seminar is sponsored by IDEA, which consists of defense acquisition educational institutions in Germany, Spain, Sweden, Australia, France, the United States, and the United Kingdom.

Those eligible to attend are Defense Department/Ministry and defense industry employees from the seven sponsoring nations who are actively engaged in international defense education programs. Other nations may participate by invitation.

Invitations, confirmations, and administrative instructions will be issued after May 1, 2005.

Contact an IDEA team member for additional seminar information:

Comm (U.S.): **703-805-5196**

E-mail: internationalseminars@dau.mil

Updated information can be found on our Web site:
<<http://www.dau.mil/international/international.aspx>>

upon your project. You don't have to learn it all by trial and error. Don't hesitate to talk to others with more experience. Get them to share what worked for them and what didn't, and consider that homework. Lessons learned reports from other projects are another great tool.

Develop an ongoing evaluation process. This should include evaluation of your internal processes, products, and documents. Ask how these can be made better, faster, easier, and cheaper. Evaluate what works and what does not for your specific project. An integral part of your evaluation is a look at metrics and measurements. Metrics must be quantifiable, measurable, and limited in both scope and number. Use them to measure things that are within your control. There are many good guides and articles on metrics. That is another part of your homework: learn about metrics.

There are two types of documentation. The first is documentation on the project, processes, and personnel so that you have information you need when you need it. It provides the background and an audit trail for everything that has been done on the project. It doesn't have to be extensive, but it does need to be comprehensive. By that, I mean that you need to make notes—on a daily basis if possible, but at least periodically—about what has happened, what has been accomplished, what the problems were, and how they were overcome. This log or diary will help you answer the questions that arise and can protect you. It also provides lessons learned for yourself and others.

The second type of documentation includes those papers or electronic files that are needed to meet management requirements or regulatory guidance. These are the plans, schedules, analyses, documents, and reports that many managers see as wasted effort. While I, too, have felt that way at times, it turns out that most of them *are* worthwhile. They do more than just filling the squares: they help apply organization, structure, and scope to the project, if nothing else. They also provide the history, records, justification, and basis for decisions on the project and what you have done. They will help you answer the questions that I guarantee will come.

When the documents are prepared, ensure that they are reviewed, edited, and checked for accuracy. Look at them for content and appearance. Bad grammar, errors, typos, and wrong or missing information can damage the document's credibility, hurting both you and the project. It is also good practice to have a subject matter expert review documents for technical and functional content.

While you need to coordinate documents, especially draft documents, for inputs, when it comes to the final version, coordinate for approval/disapproval, *not* as a question or

as a request for input. If you continue to ask for or allow input, you will never get the document finished. Of course there are people out there in management positions or in other organizations who will keep giving you inputs and changes whether you want them or not. That is something that you may have to live with, but good internal reviews should minimize it.

Other Processes

There are many other processes that you need to put in place or review. The following are a few to be considered early in the project. I'll talk about others in Part II.

Develop a problem-resolution process. Problems are going to arise. They may be technical, financial, equipment-related, differences of opinion, or personnel problems. Having a process to resolve problems can save you headaches. And the "process" of you, the manager, resolving all of the problems is not the best way to do it. Ensure problems or obstacles are brought to the attention of the appropriate people—the right people in the project and those in other organizations where you need support. This is where the buy in and the champions really pay off. You will be coordinating or asking help of others. Getting to the right people moves things along faster and prevents delays or wasted effort.

A good risk management process is another necessity. Don't make it a paper shell just to check the boxes. Use the process to find those risks that could have a negative impact on the project, and diligently work to find strategies to overcome, bypass, resolve, or mitigate the risks. Otherwise there might be unpleasant surprises in your future.

Standardizing terminology, data, elements, and processes is something else that will pay off. In many cases, it's already been done, and you just have to find what you need and share it with your team. Or someone on the

team may already have the answers. Standardization gets everyone working from the same sheet of music, to use a cliché. That is a part of configuration management. Ensuring that the same versions of software, documents, plans, and schedules are used by everyone is important. The same goes for the products for testing and delivery. Configuration management is just one more of the processes that you need in place.

A Warning

This section will be deemed heresy by some, but it is founded on 30 years of experience. Processes are a good thing, but they aren't the be-all and end-all for a project manager. Processes are built from what has happened before and not necessarily from what is happening *now*. There's always the unexpected and the unplanned. That's the time for the creativity and flexibility I mentioned at the beginning of this article. Innovation and original thinking may—no, let's say *will*—be needed at some point in a project's life. In many projects it will be more than once.

There is another problem with processes. Some people and organizations get so caught up in the process(es) that they forget about results. Results are what project managers get paid for. So don't get so caught up in developing or following the processes that you forget why you are there: to end up with a specific product or outcome. Processes are the means to an end, not the end itself.

Wrapping Up Part I

Project management is an art. This article gives you a part of the palette of paints to work with. Next issue will provide more colors. Remember that no two projects are the same. Some principles and processes will work all of the time, and others will help in most projects. The ideas and suggestions in this pair of articles are not comprehensive; they are basic building blocks. Books have been written on the subject of project management and on many of the topics mentioned here and in the next article. Consider this two-part primer as a distillation of some of those that can help make you and your project a success. For the new project manager, it can appear to be a daunting job with pitfalls galore—and it is. Yes, it's tough, but it's also one of the most rewarding jobs in the world.



*Having a process to resolve problems
can save you headaches.*

The author welcomes comments and questions. Contact him at wayne_turk@sra.com.

The Rogue Program Management Art of War

Ward & Quaid's Excellent 8½ Axioms

Maj. Chris Quaid, USAF ■ Maj. Dan Ward, USAF

All the exaggerations are right, if they exaggerate the right thing. (G. K. Chesterton "On Gargoyles")

So you're a program manager with a problem. You've got no money, no support, your senior leadership doesn't know who you are, your subordinates want to quit, your peers want to get you fired, you get no respect and no travel budget, and when you go to the beach, you just know that big ol' Arnold Schwarzenegger look-alike will be kicking sand upon your puny 98-pound self. Sound familiar? Keep reading!

And Now For The Rest Of The Story...

But wait, there's more. Deep within in the very grain of your fiber, you absolutely, positively know your unfunded, unkempt, unloved, uncared-for program will change the face of the planet, ensure world peace, and preserve the American Way of Life. It might even restore balance to the galaxy ... if it could only be funded, kept alive, and nurtured. As the PM, that's your job, and it's a problem.

What to do, what to do? Start by asking some possibly scary questions, such as: In spite of the low pay, long hours, lack of respect, sleep deprivation, and bone-crushing bureaucracy, will this program make a positive, significant difference in the lives of my customers? In other words, is it worth fighting for? If I do not pursue this effort to the best of my ability, can I live with the consequences of my failure to act? Do I want to pursue a low-risk, low-payoff effort, where courage, creativity, and passion are not necessary (and indeed might even be detrimental)? Or do I want to spend my professional life

pursuing meaningful goals, doing things that stretch, challenge, and maybe even scare me? Will I be primarily motivated by fear and therefore seek safety, or will I be primarily motivated by a desire to make a difference, and therefore face danger head-on?

We're Here To Help.

Submitted for your consideration are the following 8½ Axioms of the Rogue Program Management Art Of War. They are based on our own experiences as well as experiences of others who will remain nameless for their own protection. These axioms work most of the time, but there is no money-back guarantee. In fact, some of this may even get you in trouble. But it just might be worth it.

So proceed at your own risk. And may The Force be with you.



Quaid is assigned to the Technical Executive Office of the National Geospatial-Intelligence Agency, and **Ward** is assigned to the Air Force Research Lab in Rome, N.Y.

1.0. Have the Mission Imperative and maintain a persistent, consistent awareness of Why You Are Here.

- This means you *must* grasp the Big Picture, and that takes some serious effort. Dig around, talk with the air staff, talk with the warfighters, read the newspaper, and make sure you really grasp exactly how/where/when/why this project or system fits in to the customer's overall mission objective. Maybe it doesn't, and if that's the case, *move on!*
- Keep in mind the volumes and volumes of formal requirements for any given system are often a mixed bag. Some are legit and some are questionable. Some may never be wholly satisfied, and some never should have been written in the first place. What matters most is the mission objective/purpose/goal as defined by the mission executor.
- The PM above all others must believe the Program is Real. Share your vision. Make a bold plan. And take the Army 160th Special Operations Aviation Regiment's motto to heart: NSDQ (Night Stalkers Don't Quit).

2.0. Always, always, always do what's right for the customer, the mission, the taxpayer, the government, and yes, even the contractor.

- Every day, in every way, take the ethical, honest, right, and "high" road. Integrity is non-negotiable and absolutely essential. If you disagree, please stop reading now and go resign. Immediately. We're *not* kidding.
- Understand that you will occasionally get kicked in the teeth for doing the right thing.
- Also understand there is something profoundly cool about getting punished for doing the right thing. Wear those battle scars proudly ... and beware of those without such marks.

3.0. The bureaucratic rules, policies, and procedures were not created for you, so do not play by them or expect them to help you.

- A significant percentage of processes you encounter were not created with your particular task in mind, so be willing to create your own to meet your program's and your customer's needs. This does not contradict Axiom 2.0, not even a little bit.
- If it's not statutory, it's waivable (and even if it is statutory, there are usually many ways to interpret the law). Sometimes it does hurt to ask the question, but ask anyway. Sometimes it's better to ask forgiveness than permission. This also does not contradict Axiom 2.0, not even a little bit.
- Original, innovative programs require original, innovative program managers to take original, innovative actions. One more time: this does not contradict Axiom 2.0, not even a little bit.
- You must be creative, resourceful, agile, and aware of your environment, and you must be able to adapt to changing, unpredictable circumstances (like having all your funding cut). Flow like water around barriers and

roadblocks. And don't take no for an answer when you know the right answer is *Yes*.

- Fully use and empower both your subordinates *and* your customers. If you treat them well, they'll take care of you too.

4.0. Make friends, alliances, and networks. Networking is working! (We think we've said that somewhere before.)

- Merge with other rogue programs to form a "program confederation," swap war stories, and share tactics, resources, encouragement, and support.
- HR (human resources) is everything—if by HR you mean *talent*. PR (public relations) is everything—if by PR you mean *storytelling*. Get the best talent you can onto your team in whatever way you can (not neglecting Axiom #2.0, not even a little bit). Tell the best, most gripping, interesting, and honest story you can. Few roadblocks can stand up to an onslaught of focused talent and compelling stories.
- Leverage and cannibalize existing programs. No sense in re-inventing the wheel—unless it needs to be reinvented (it often does!).

5.0. Assume significant risk will be required in order to be successful.

- Assume a percentage of the risks you take will turn out badly and will hurt profoundly.
- No fear. Ever, ever, ever. Don't be afraid to fail; don't be afraid of pain; don't be afraid to speak up; don't be afraid to challenge the status quo; don't be afraid Col. X and Dr. Y will get mad at you; and especially, don't be afraid of doing the right thing. On second thought, go ahead and be afraid—just don't let fear hold you back.

6.0. Find grant money and unusual customers with resources in search of your deliverable. We promise they are out there. The trick is to find them, and it can be done!

- Establish close relations with your customers, operators, or whatever label applies to your user base. Know them, love them, take care of them, and for gosh-sakes listen to them.
- Listen to the users.

**Flow like water
around barriers and
roadblocks.**

IN MEMORIAM

The Defense Acquisition University and the entire defense acquisition workforce extend our deepest sympathy to the family, friends, and colleagues of two defense contracting officers who were killed in a rocket attack on the U.S. Embassy compound in Baghdad on Jan. 29.



Barbara Heald, 60, of Falls Church, Va., was working and living in Saddam Hussein's former palace within the Green Zone on the day of the attack. As a defense contracts negotiator for the Iraq Project and Contracting Office, she served the people of the United States and Iraq by contracting for and delivering services, supplies, and infrastructure identified within the \$18.4 billion Iraqi Relief and Reconstruction Fund.

A native of Stamford, Conn., Heald volunteered to serve in Iraq after retiring from the Department of Agriculture. She spent much of 2004 in Iraq aiding the reconstruction and had recently returned to Iraq for a second stint.



Lt. Cmdr. Keith E. Taylor, USNR, 47, of Irvine, Calif., was also living and working in the Green Zone while serving with Commander, U.S. Naval Forces Central Command Detachment Iraq. As a contracting officer for the Iraqi reconstruction effort, Taylor's job was to award, monitor, and close out contracts for road improvements, schools, and water treatment plants.

A native of Jacksonville, Fla., Taylor was a member of Naval Supply Support Battalion 1 out of San Diego, Calif. Arriving in Baghdad on Oct. 6, 2004, this was his second mobilization. Taylor's first mobilization for Operation Iraqi Freedom lasted from February to June 2003, serving with Naval Air Force Pacific. His second mobilization was to have ended on March 30.

Assistant Secretary of the Army for Acquisition, Logistics and Technology Claude Bolton held a Pentagon memorial service for Heald and Taylor on Feb. 3 at the 9/11 Memorial Chapel.

- Listen to the users. Listen, listen, listen, listen, listen. Ask good, deep, probing, persistent questions, and listen some more. Then, go do.

7.0. Trust people.

- 'Nuff said. (For those who insist on more, check out "The PM's Dilemma," *Defense AT&L*, May-June 2004.)

8.0. Ensure leaders at the highest level are aware of your program.

- Don't cut the middle-management reviewers out of the loop entirely, but don't let critical information stop halfway up the food chain either.
- Top cover = Good. Mid-level blockages = Bad (but not insurmountable).
- Disagreements about the viability and value of a program are inevitable. A general rule of thumb is to assume the warfighter/user is correct, even if he or she disagrees with some in your chain of command.
- When elements of your chain of command disagree about the viability of a program, the highest ranking person is often correct. *But not always*. This can be determined by reviewing the previous bullet and going along with whoever agrees with the warfighter.
- This means you may need to develop selective hearing occasionally and accept the consequences thereof. It is probably a good idea to enlist the support, assistance, and top-cover of the person whose opinion is in agreement with the warfighter—as well as the warfighter, of course.

8.5. Many people will try to shut you down or tell you no.

- The question is whether they ever had the authority to give you a "yes" in the first place. (That piece of programmatic wisdom comes from none other than Oprah Winfrey.) If a person or review board has no authority to give you a "yes" but is very willing to tell you "no," then why did you seek their approval in the first place? Seek out and focus on authorities who can grant you a "yes."

Funding and its Antecedents

Some within the DoD acquisition community are fond of saying "If it ain't funded, it ain't." There is a kernel of truth here, a partial truth, but we recommend adding the word "yet" to the end of that statement, or maybe "as far as *you* know." The thing is, the cynicism and tunnel vision of the "if it ain't funded" attitude is extremely limiting. How many of our most useful programs, inventions, and concepts would never have occurred if we all had to wait for the legitimacy of real programmatic funding?

Leadership is required here, and we're not talking about people in positions of formal authority. You must overwhelmingly convince your peers, subordinates, superiors, and critics that your program is here to stay and their

lack of vision, enthusiasm, and support does not deter you or dismantle the reality of what you are delivering. When faced with skeptics or naysayers, use their real underlying concerns and self interests as your ally. Make sure the faint-of-heart risk avoiders understand what could occur if they fail to act upon the mission imperative (see Axiom 1.0).

The Kantian concept of avoiding pain and maximizing pleasure can be a motivator and should be leveraged, not only for the poor guy in the foxhole who needs the system for his (and, increasingly, her) survival, but also for the well-dressed acquisition professional, warm and dry behind a desk, who must understand that this system development or acquisition also contributes to his or her own survival.

Courage, My Friend

In the land of the free and the home of the brave, where ingenuity and resourcefulness are core elements of our national character, the very concept of waiting for permission through formal bureaucratic funding is practically un-American. It hamstringing those great patriotic survival skills of creatively adapting, overcoming obstacles, enduring hardships, and persevering to establish meaningful solutions. Anyone have a problem with that?

It all comes down to flexibility, integrity, creativity, and moral courage, which are some of the most important attributes of a leader. The Scitor Company has its employees ask, "Is it reasonable, is it fair, and does it make good business sense?" Not a bad set of guidelines for the rest of us.

Now Hold The Phone!

Naturally, some readers will find this approach subversive and over the top, to which we can only reply, "Yup. That's kinda the point."

The DoD of 2005 does not need more of the keep-your-head-down-and-don't-make-waves kind of attitude. Not in this war. Not at this time. Not against this adversary. Our military transformation has made great headway but is not complete. The acquisition, technology, and logistics community could use a few cage-rattling, status quo-defying, over-the-top ideas. We absolutely cannot afford to rely on the more orderly, submissive, predictable approaches of the past. Now is the age of creative, innovative rogue leaders, not conventional, by-the-numbers managers.

Sure, the official policies matter and should be understood. Yes, the program office memorandum exists for a reason, and sometimes the system actually works as advertised. Nobody denies that. We are not advocating anarchy here. We simply want to point out that sometimes the system breaks down—and where does that

Assume significant risk will be required in order to be successful. Assume a percentage of the risks you take will turn out badly and will hurt profoundly.

leave the warfighter? Sometimes things go wrong in ways the Received Orthodoxy is unable or unwilling to remedy. That's where these 8½ axioms come into play. On the fringes, in the gaps and cracks of an otherwise well-oiled machine. As Lawrence Wilkerson wrote in *Joint Force Quarterly* (Summer 1997), "People accustomed to studied routine must be capable of quick and decisive departure from that mindset to be repeatedly successful. Order must tend to chaos ... in order to intuitively adapt, triumph and endure."

This rogue approach won't work all the time or apply to every project. It isn't intended to, even though the core principles expressed here are in fact universal. Every PM, rogue or conventional, needs to

- 1.0. Focus on the Mission
- 2.0. Maintain Integrity
- 3.0. Be Creative, Resourceful and Agile
- 4.0. Network
- 5.0. Bravely Accept Risk
- 6.0. Listen
- 7.0. Trust
- 8.0. Keep People Informed
- 8.5. Avoid the Naysayers

Gee, when you put it that way, these axioms don't sound so barbarically roguish after all.

The cage-rattling, status quo-defying authors welcome comments and questions. They can be reached at christopher.n.quaid@nga.mil and daniel.ward@rl.af.mil.

The U.K.'s Defense Logistics Transformation Program: Learning the Lessons from Iraq

John Dowdy ■ Maj. Gen. Tony Raper, U.K. Army

Of the 467,000 coalition troops deployed to the Gulf region as part of Operation Iraqi Freedom in the early months of 2003, fully 46,000 were British, under the United Kingdom's Operation Telic. For the United Kingdom, Operation Telic was the largest military operation since the 1990–91 Gulf War, featuring the deployment of significant military capabilities: 19 warships, 14 Royal Fleet Auxiliary vessels, 15,000 vehicles, 115 fixed-wing aircraft, and nearly 100 helicopters. Although U.S. forces outnumbered British forces on the ground by more than five to one, the United Kingdom actually contributed a greater proportion of its active military personnel than the United States. British forces made a significant contribution to coalition efforts, leading the amphibious assault on the Al Faw peninsula, taking the city of Basra, and conducting over 2,500 air sorties.

Against the Clock

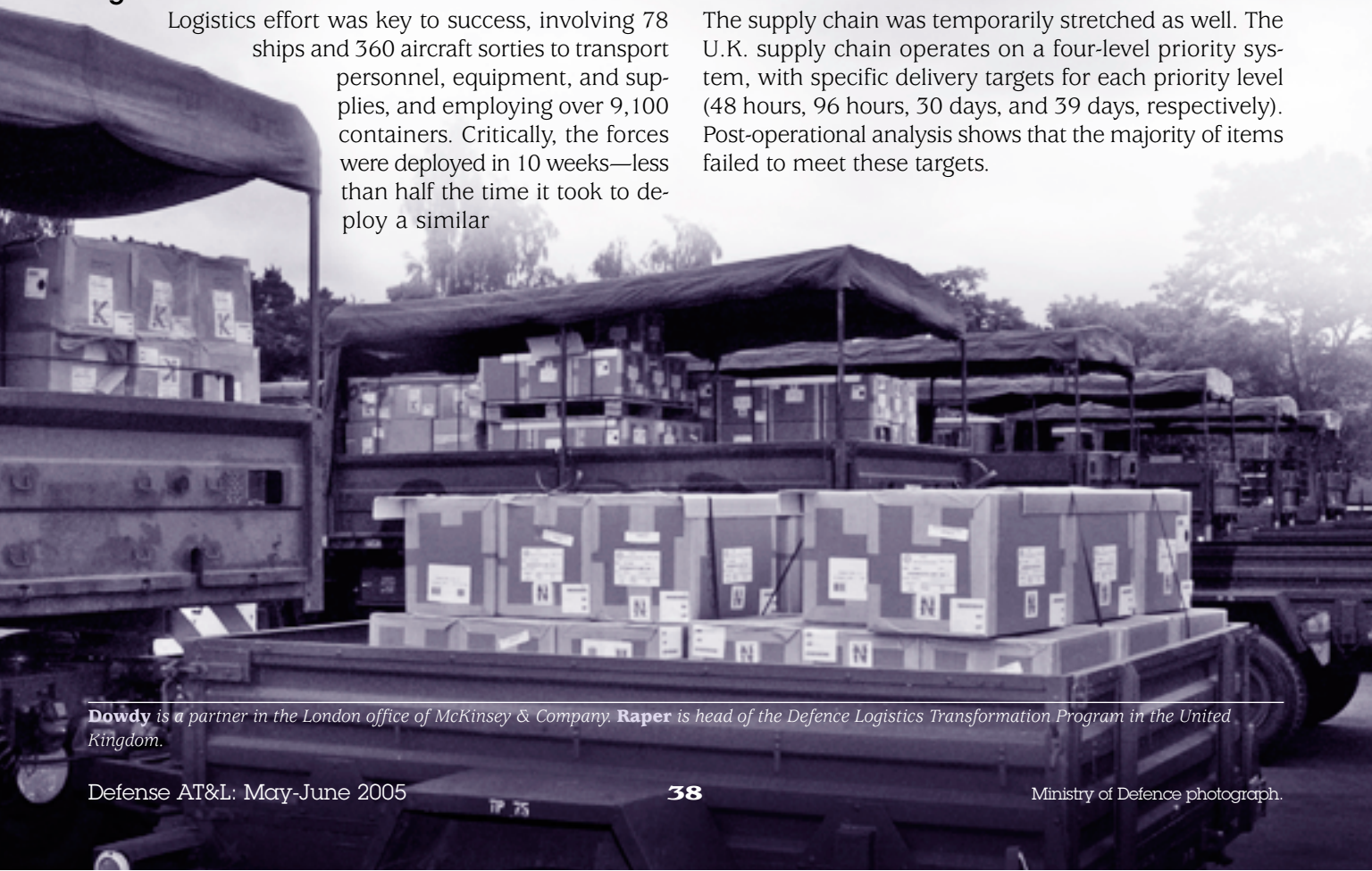
Logistics effort was key to success, involving 78 ships and 360 aircraft sorties to transport personnel, equipment, and supplies, and employing over 9,100 containers. Critically, the forces were deployed in 10 weeks—less than half the time it took to deploy a similar

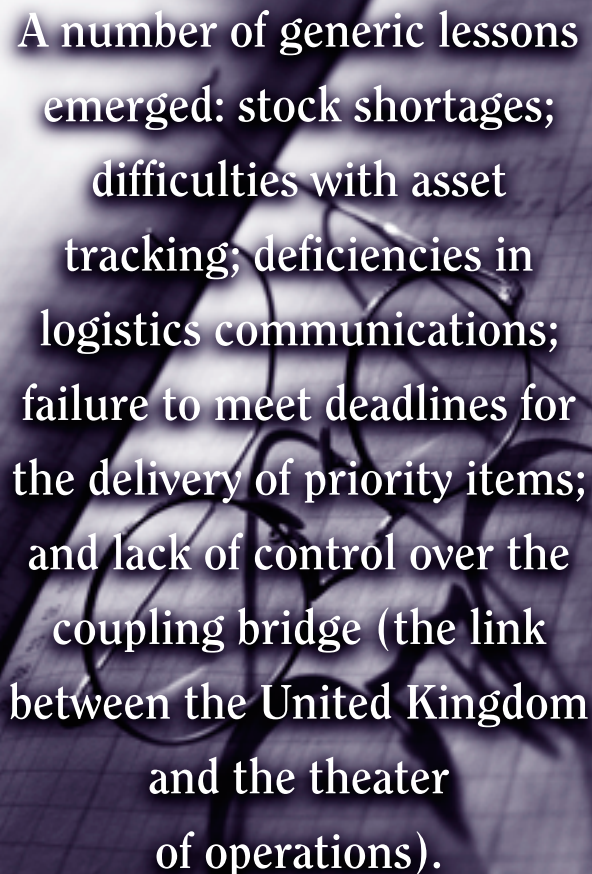
number of personnel and quantity of materiel for the Gulf War, and much more quickly than the governmental planning assumptions envisaged.

As a result of the short lead time, there were inevitably some gaps in existing operational stocks. As one might expect, there were substantial efforts made to plug these gaps and to upgrade existing capabilities before operations began. Sixty-nine tons of combat identification equipment were fitted to vehicles, 6,500 vehicles were repainted, and 194 urgent equipment upgrades completed and fielded—all in a very short period of time. In instances where lead times were too short to purchase required vehicle spares, parts were cannibalized from vehicles in units that were not deployed. Some items made it into theater, but difficulties locating them prevented their being delivered to where they were needed.

The supply chain was temporarily stretched as well. The U.K. supply chain operates on a four-level priority system, with specific delivery targets for each priority level (48 hours, 96 hours, 30 days, and 39 days, respectively). Post-operational analysis shows that the majority of items failed to meet these targets.

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A number of generic lessons emerged: stock shortages; difficulties with asset tracking; deficiencies in logistics communications; failure to meet deadlines for the delivery of priority items; and lack of control over the coupling bridge (the link between the United Kingdom and the theater of operations).

This failure to deliver on schedule, combined with a lack of in-transit visibility, resulted in some loss of confidence in the deployed supply chain. Frustrated operators in the field re-ordered items and inflated priorities in an effort to get what they needed, further stressing the system.

U.K. equipment did, however, perform well in the Gulf, even with the inherent difficulties presented by desert operations. Equipment availability was generally high: 90 percent for the Challenger 2 main battle tank and 95 percent for the AS90 self-propelled gun, for example. Average helicopter availability was 66 percent, a marked improvement over the levels achieved in recent desert exercises. The quick deployment to the Gulf region, high equipment availability in theater, and operational successes all demonstrate that U.K. armed forces have made major strides in shifting from a static force to one that can rapidly and effectively deploy on expeditionary operations.

What We Learned

Beyond the specific shortfalls and shortages of individual items outlined above, there were a number of more generic lessons that emerged from Operation Telic, including five specific logistics shortcomings: stock shortages; difficulties with asset tracking; deficiencies in lo-

gistics communications; failure to meet deadlines for the delivery of priority items; and lack of control over the coupling bridge (the link between the United Kingdom and the theater of operations). Many of these lessons are not new, however. The same issues were noted in operations in Bosnia, Kosovo, and Macedonia, and on exercises in Oman. In some cases, they dated back to the early or mid-1990s. The need for an effective asset tracking capability, for example, was identified on five of the six occasions shown in the figure on the next page and has been in evidence since the Gulf War, if not earlier.

Applying a Transformational Philosophy to Logistics

To address the shortcomings, the U.K. Ministry of Defence launched a defense logistics transformation program early last year, designed to increase the effectiveness of logistics across the department, improving efficiency along the way. Air Chief Marshal Malcolm Pledger, chief of defence logistics, developed seven key principles to guide the transformation effort:

Configure for the most likely operational scenario

Logistics support has traditionally been structured and trained for large-scale, high-intensity operations then scaled down for medium-scale or lower-intensity operations. The aim now is to configure for the most likely operational scenario but have the flexibility and scalability to deliver against the most demanding. This will involve rebalancing human resources and equipment between unit and formation logistics supply units.

Minimize the deployed footprint

One of the main objectives in creating a more agile force is minimization of the deployed footprint, drawing resources back to the point where they can be used most efficiently and flexibly, based on demand pull. This will involve such changes as shifting off-platform repair activity out of the operational theater for all but the most demanding operations and reducing demand for those resources by reducing the need for logistics support, in particular by improving the performance and reliability of equipment.

Shift from a system based on four lines of maintenance to a simplified construct

The Cold War left a legacy of numerous fixed operating bases in the United Kingdom and remote third and fourth lines, associating traditional support with four depths and four lines of maintenance. These are no longer cost-effective given the reduction in threat to the U.K. base and the move to a more expeditionary posture. The traditional four lines of logistics support will be re-formed into a simplified, two-level construct: forward and depth. Forward logistics support contains only deployable support elements. It has a greater need for resilience and will typically be carried out by military personnel but will in-

Identification of Logistics Shortcomings

Operation/ Exercise	Poor asset tracking	Poor logistics communication	Stock shortages	Priority deadlines not met	Lack of control over coupling bridge
Operation RESOLUTE Bosnia-Herzegovina 1995-96	▲	▲	▲		
Operation LODESTAR Bosnia-Herzegovina 1996-98	▲	▲			
Operation AGRICOLA Kosovo 1999		▲	▲	▲	
Operation BESEMER Macedonia 2001				▲	▲
Exercise Saif Sareea II Oman 2001	▲	▲	▲	▲	▲
Operation TELIC Iraq 2003	▲	▲	▲	▲	▲

Source: U.K. Ministry of Defence

creasingly employ Ministry of Defence civilian and contractor personnel. Depth support contains all other deployable and all non-deployable elements. It contains the minimum number of Service personnel (including reservists) required to meet military headcount requirements.

Concentrate resources and materiel

The streamlining of depth support will allow concentration of facilities for a given platform on a single location, eliminating the duplication and waste of multiple facilities with identical capabilities. In the air environment, depth support will be concentrated on appropriate hubs that will carry out on-aircraft repair and overhaul (and some upgrade) and depth B off-aircraft support (similar to today). The aim is to have single facilities per platform and minimum duplication of activity and infrastructure.

In the land-deployable component, the key required change is to withdraw most stock held in barracks, centralizing stock holdings and supporting major training exercises and operations with priming equipment packs (PEPs) that contain sufficient materiel to sustain the force until the supply chain is established.

Optimize asset availability

Across all environments, platform-level serviceability is driven by spare parts availability. All too often, the lack of the right spare at the right place at the right time leaves platforms unserviceable—aircraft and vehicles unfit to perform their required tasks and, in many cases, immobilized. Although parts holdings are below planned levels for some capital spares, stock levels overall are gen-

erally more than adequate, which raises three possibilities: parts are either in transit; they are serviceable, but in the wrong place; or they are unserviceable. The reality is that many of them are stuck in the repair loop for as long as 180 days. Shortening the repair loop, thereby improving parts availability, is, therefore, a key improvement lever.

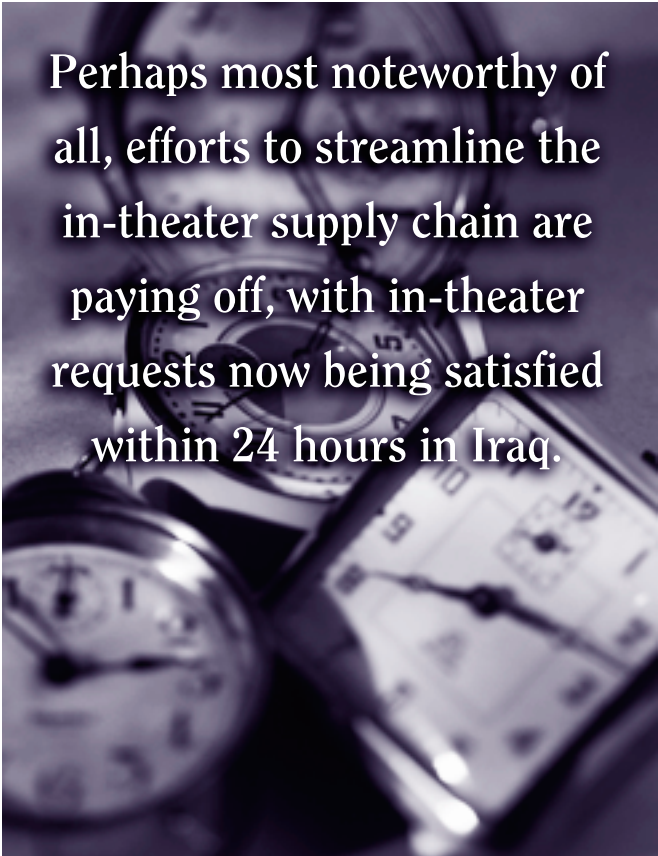
Rely on an effective supply chain

Supply chain effectiveness drives the whole of the logistics system and the underlying culture and behavior. Necessary improvements include the creation of a joint expeditionary supply chain organization, simplification of the physical supply chain, and improved transparency.

Have access to timely, relevant, and accurate information

Access to better information, primarily on performance and status, will be key to the ability to transform logistics and to achieve the necessary results. It will also enable better forecasting and planning and the reduction of risk,

Access to better information, primarily on performance and status, will be key to the ability to transform logistics and to achieve the necessary results.



Perhaps most noteworthy of all, efforts to streamline the in-theater supply chain are paying off, with in-theater requests now being satisfied within 24 hours in Iraq.

hence better decisions. However, its achievement will require the streamlining of logistics processes as well as the defense-wide use of common applications.

Early Signs of Progress

There are already encouraging signs of progress in a number of areas:

Forming single-depth hubs

Following the announcement by British Minister of State for Armed Forces Adam Ingram on Nov. 25, 2004, work is under way in a number of areas to form single-depth hubs for all major fast-jet, heavy-lift, ISTAR (Intelligence, Surveillance, Target Acquisition, and Reconnaissance), and rotary-wing platforms. All on-aircraft depth activity for the Tornado GR4, for example, will be located at RAF Marham. New arrangements have been established for a number of off-aircraft items as well, such as the Tornado Nose Radar, which has shifted from a push system to demand pull, providing line replaceable units (LRUs) for on-aircraft scheduled maintenance and squadron-level rectification activity, successfully delivering substantially increased availability with 55 percent less inventory.

Streamlining the repair loop

By streamlining the end-to-end repair loop, simultaneously addressing customer demand, the transport loop, design authority, and spare provisioning, the number of vehicles in the base overhaul repair loop for the Warrior

armored fighting vehicle has been reduced from 75 to 35, freeing up a full battalion's complement of vehicles.

PEPs: changing the way the Army deploys on operations

In the past, units preparing for deployment would assemble the required equipment and supplies from what they held in barracks, quickly estimating and ordering whatever else was required. Unfortunately, that approach all too often meant provisioning demands swamped the supply chain just after deployment, when units realized additional items were needed. The idea behind priming equipment packs (PEPs) is to systematically determine the full set of materiel and supplies to sustain a certain unit in a certain environment until re-supply through the support chain is possible, and to deliver this to them in one preassembled pack prior to deployment. Unit trials of the concept in June 2004, delivered real improvements in effectiveness, in particular reducing the burden on the quartermaster and his or her team in the busy time before deployment.

In-theater supply chain: 24-hour delivery

Perhaps most noteworthy of all, efforts to streamline the in-theater supply chain are paying off, with in-theater requests now being satisfied within 24 hours in Iraq. There are plans to roll these changes out to other operational theaters, starting with Afghanistan.

Changing Operations, Changing Requirements, Changing Solutions

The nature of operations has changed, and we face new challenges. Expeditionary operations are now the principal role of the U.K. armed forces, and associated logistics support must be joint at-force-level, rapidly deployable and recoverable, robust, agile, flexible, and with the minimum logistics footprint. The "effects-based" philosophy of the U.K. joint vision requires that the focus of effort throughout the end-to-end chain of logistics support be directed at delivering the required effects to the enemy's will to fight. With rapidly changing scenarios, the critical enabler is the link between effect at the front end of the chain and action throughout the chain. The whole must be optimized to meet end user needs—that is, the operational need. By applying new tools and techniques to the way the U.K. armed forces support operations, logistics transformation is successfully addressing the lessons learned in Iraq, delivering more effective support in a more cost-effective manner.

The authors welcome comments and questions. Dowdy can be reached at john_dowdy@mckinsey.com and Raper at tony.raper388@mod.uk.

Translating Strategic Vision into Tactical Implementation

Interpretive vs. Analytical Thought in AFRL Technology Development

Lt. Brian R. Smith, USAF ■ Capt. Wynn S. Sanders, USAF

In the past four years, senior leadership has demanded more responsive research and development organizations. On Sept. 10, 2001, Secretary of Defense Donald H. Rumsfeld directed the acquisition community to deliver quality technology to soldiers rapidly and efficiently. "We must recognize ... the revolution in management, technology and business practices," Rumsfeld said. "Successful modern businesses ... reward innovation and they share information. They have to be nimble in the face of rapid change or they die. Business enterprises die if they fail to adapt ... but governments can't die, so we need to find other incentives for bureaucracy to adapt and improve." Commander of Air Force Materiel Command, Gen. Gregory Martin, has called for on-time development of the right technologies. But how do working-level personnel translate these words into action?

In March 2003, an Air Force Research Laboratory (AFRL) team set out to transition a technology to the user. Our initial efforts yielded the next-generation airfield matting (AM-X) program, an initiative to replace AM-2 aluminum airfield matting, the heaviest system the Air Force deploys. From its inception two years ago, the AM-X pro-

gram has grown into a \$2.2 million tri-Service program with multiple investors. We have since identified and initiated development of five other potentially disruptive technologies. [Coined by Harvard Business School professor Clayton M. Christensen, the term "disruptive" describes new technology that displaces established technology.]

Identifying a Conceptual Framework

We found a conceptual framework that supported the strategic vision and our tactical development in *Innova-*



Lt. Smith (left) and Capt. Sanders (center) meet with Michael Jivaras (right) at NAVAIR Lakehurst and get experience lifting and placing existing AM-2 airfield matting.

Smith is a technology transition program manager at the Air Force Research Laboratory's Materials and Manufacturing Directorate (AFRL/ML). He has a bachelor's degree in economics from Harvard University. **Sanders** conducts research on amorphous metals and lightweight metal structures in AFRL/ML. He was recognized as Air Force Outstanding Scientist of the Year in 2003 and received his doctorate in materials engineering from the Massachusetts Institute of Technology.

tion: *The Missing Dimension*, in which MIT professors Richard Lester and Michael Piore attempt to understand American corporate success in the 1990s. They observed that a major aspect of growth was from innovation: leaps in biotechnology, computing, networking, and more. But why did America innovate more in the 1990s than in the preceding decades? How does the economy—and for our purposes, the AFRL—develop new technologies and enhance existing ones in a fast and efficient way? More fundamentally, how does innovation work?

Lester and Piore argue that innovation depends on two fundamental processes: interpretation and analysis. Analytical concepts are well known by AFRL personnel and provide the foundation for science, engineering, and economics. They help individuals solve problems. They assume perfect (or nearly perfect) information, clearly defined options and outcomes, and the ability to analyze risk and make informed trade-offs.

In contrast, interpretive concepts help individuals explore ambiguity. Interpretive interactions begin with a conversation in which people may have trouble comprehending each other. While these discussions are open-ended, unpredictable, and sometimes have no tangible outcome, they help individuals understand different perspectives and overcome organizational barriers.

Interpretive concepts are derived from Heideggerian philosophy (reviews of which are given in *Being-in-the-World* by Hubert L. Dreyfus and *The History of Political Philosophy* edited by Leo Strauss and Joseph Cropsey). Heidegger discusses a concept of being that has implications for the way humans exist and is unique from traditional western philosophers like Aristotle and Descartes. Individuals define themselves not by roles or categories (e.g., engineer, male, American, etc.), but by the context of their social activities. People can be one thing in association with one group of people yet interpret themselves differently in other groups. In effect, humans have no specific nature that can be categorized and independently studied since that nature is dependent upon social context.

For our purposes, awareness of Heideggerian concepts, translated to the business world by Lester and Piore, provides one framework for understanding strategic transformational concepts and implementing them at the tactical level. We can better comprehend individual views and organizational opinions because we have the ability to view them not as traditional categories (e.g., good, bad, right, wrong), but as valid beliefs shaped by the social context in which a person or an institution exists.

We have relied on this conceptual framework to develop technology more rapidly for the Department of Defense. Much of our work has been analytical: forming integrated product teams (IPTs), developing models, and recording

user requirements. But we have also spent considerable time conversing with people, experiencing existing technologies, and learning about different perspectives and opinions.

Case Study: Next-Generation Airfield Matting Development

In March 2003, we identified a promising technology to develop. While in graduate school, author Sanders had invented a three-dimensional honeycomb structure. The idea seemed promising, so it was modeled and a rapid prototype produced.

With prototype in hand, we began building a network of contacts from which our IPT would emerge. We met with experienced managers, and it was suggested that we apply the technology to airfield matting. We spoke with Dr. Charles Browning, director of the Air Force Research Laboratory's Materials and Manufacturing Directorate (AFRL/ML), who subsequently offered us \$60,000 to explore the concept further.

Knowing little about airfield matting, we also convened a team of knowledgeable users and airfield matting experts to discuss needs and expectations. Air Force and Marine Corps laboratory, acquisition, and user representatives convened at Wright-Patterson Air Force Base, Ohio, in August 2003. We discussed user requirements and field experiences. Integrated product and process development tools provided a framework to record quantitative information.

After gathering initial user requirements, we initiated face-to-face discussions with field users to gain experience with the current technology. We placed ourselves in our customers' shoes by visiting the Marine Corps NAVAIR Lakehurst, N.J., facility to set up AM-2 on a small scale. Author Smith also traveled to the Marine Corps Air Station in Yuma, Ariz., to interact with the Expeditionary Air Field teams. We met with the Air Force Civil Engineering Support Agency at Tyndall Air Force Base, Fla., to discuss their experiences. These activities not only increased our understanding of the problem, but also enabled us to build business relationships with the user community. Our growing competence and determination convinced the Marine Corps to invest \$50,000 in support of development efforts.

We eventually invested our seed money into promising commercial technologies. We developed an analytical model with the Naval Surface Warfare Center Carderock, Bethesda, Md., and the University of Dayton Research Institute that predicted the proposed solution could withstand the necessary operating conditions. We presented the findings and proposed future plans to representatives from the Marine Corps and AFRL/ML, which led to the investment of additional development funds.

Our strong network of advisors helped us quickly address the program unknowns. For example, we were uncertain how to ameliorate manufacturing issues and affordably produce the mat, and we were unsure of the accuracy of our models. With Army-provided data on the existing and previous matting and expert guidance, we narrowed our design options to a few promising solutions. We discussed various manufacturing processes with experts and devised ideas to meet our cost objectives. In summer 2004, we consolidated our empirical data to seek additional funding. We briefed the Air Warfare Battlelab, Mountain Home Air Force Base, Idaho, and secured funding to procure and evaluate panels.

The first panel was produced in November 2004 for coupon testing. A single-panel test with the Army took place March 2005, to be followed by a full eight-panel matting system test three months later.

Analysis versus Interpretation in AM-X Development

During AM-X development, we used many analytical concepts learned in acquisition courses. We formed an IPT and used it to make critical programmatic decisions. We gathered and recorded user requirements early in our program. We considered lean manufacturing concepts to minimize waste and rework.



Why have we been able to easily interact with more organizations and identify promising technologies faster than others? To some extent, our training made us successful. Even so, training did not prepare us for the ambiguity and unknowns of the innovation process.

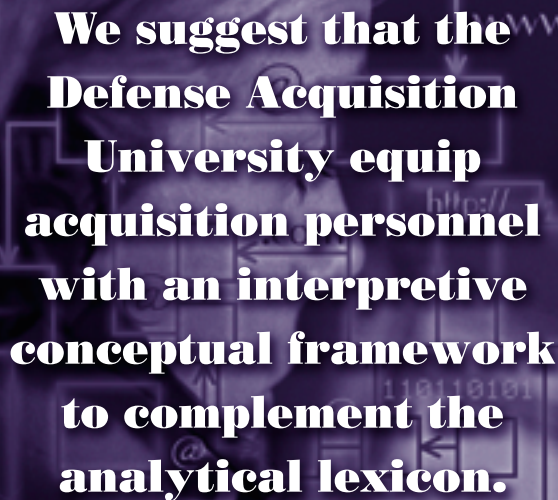
Interpretive concepts were also essential to development efforts. Frequent conversations helped us understand the history of AM-2 from different vantage points. Our meetings helped us learn the diverse attitudes and nomenclatures of different organizational cultures: the Air Force civil engineers, the Marine Corps, the battlelabs, contracting, and different small businesses. Interactions helped us gauge the individuals or organizations that could contribute to accelerated development, and those that required more patience.

Understanding different attitudes and beliefs helped us continue an accelerated development schedule even when problems arose. In one situation, people thought we were telling companies that our development concept would be purchased and fielded by the Air Force without competition, so we modified our conversational style to avoid the misinterpretation. In another case, a trip we made caused individuals to perceive—wrongly—that the Marine Corps was not actively supporting Air Force development efforts. We worked together to overcome the misperceptions, which strengthened our team. Finally, some on the IPT decided the optimal path was to first develop a new, lighter-weight mat using the existing AM-2 connection method; others, however, wanted concurrent development of a new connection mechanism. Discussions are ongoing. For the moment, we have decided to use the existing AM-2 latch but have invested funding to investigate other latching concepts.

The conceptual framework also helped us manage situations where analytical decisions later required re-evaluation—what Lester and Piore call the “tension between analytical and interpretive thought.” For example, in June 2004, we modeled a mat design and built a tool to manufacture prototypes. Only around September 2004, shortly before production, did we learn that our analysis of the model was not entirely accurate. Rather than halt production to modify the tooling, we decided to commence with prototype production to avoid a schedule slippage. We made analytical decisions based upon information we had at the time. Invariably, we learned more as we proceeded, forcing us to re-evaluate those initial analytical decisions. In this particular case, we decided that manufacturing and testing a sub-optimal panel to validate the new performance model was more important than a two-to four-month redesign. We relied upon our experts to help us make decisions, and then we communicated the reasoning and implications of our decisions to our investors and customers.

Replicating and Spreading the Interpretive-Analytical Framework in DoD

Through conversations with scientists and engineers, our technology portfolio continues to grow. In September 2004, Smith received development funding from Brown-ing for a heat transfer technology to prevent airfields and



**We suggest that the
Defense Acquisition
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pavements from accumulating snow and ice. Smith has contacted a broad base of experts and customers. A prototype will be built and evaluated in 2005, and other technology applications will be investigated. In March 2005, for example, Smith and Lt. Allyson Schutzenhofer, USAF, researched and are commencing development of heated vest technology. We are evaluating funding for at least three other ideas and exploring, with some organizations, work requiring extremely short development cycles of 90 days from initiation to fielding.

Why have we been able to easily interact with more organizations and identify promising technologies faster than others? To some extent, our training made us successful. As acquisition officers, we were prepared to succeed in analytical situations. As university undergraduate students we had been taught to solve problems, make informed trade-offs, and analyze probabilities of success or failure. Upon entering the DoD acquisition community, we were trained to follow processes, listen and numerically record customer needs, minimize waste and rework, and develop technology capabilities.

Even so, training didn't prepare us for the ambiguity and unknowns of the innovation process. We were not equipped with concepts to help us overcome organizational barriers and individual biases. We were not prepared to address cultural roadblocks associated with joint innovation and development.

To address this deficiency, we suggest that the Defense Acquisition University equip acquisition personnel with an interpretive conceptual framework to complement the analytical lexicon. Ideas presented by Lester, Piore, and

others should be researched and related to DoD acquisition and technology activities. Personnel should be taught how to build dynamic teams that explore ambiguity, gather requirements, and converse with users to question them about their needs and respond to questions about technology capabilities. Interpretive concepts should be taught at introductory acquisition courses and compared and contrasted with more analytical approaches.

To be sure, teaching a new conceptual framework is not a panacea, and our success was dependent upon other factors. Our management provided us active and flexible guidance, frequently meeting with us when issues arose and referring us to known experts. Browning quickly provided seed money when we approached him with a compelling concept that might have broad defense applications. Dozens of DoD personnel from every Service took time away from their busy schedules to provide us feedback and guidance on our development efforts. The small-business community consistently provided us dynamic new concepts, patiently answered our questions as we learned, and responded promptly to our needs.

Reforms are needed to help individuals rapidly develop technologies in answer to Rumsfeld's directive. Short-lead-time seed funding should be available to explore new, potentially disruptive, technology concepts. Contracting should operate an order of magnitude faster, allowing personnel to quickly invest small amounts of funding in unique technologies. Supervisors should allow scientists, engineers, and program managers to spend part of their time exploring unorthodox concepts outside traditional research programs. Small businesses must be funded to explore ideas faster, with smaller, more spontaneous venture funds.

A modified conceptual framework, coupled with the aforementioned reforms, will accelerate transformation within the DoD acquisition and technology community. It will energize the workforce—just as it has motivated us—to identify and develop new technologies. An energized DoD acquisition community can more quickly respond to new and unexpected threats. Greater speed and agility will contribute to future victories on the field of battle and will deter and protect against our nation's enemies.

The authors welcome comments and questions. Contact them at brian.smith4@wpafb.af.mil and wynn.sanders@wpafb.af.mil.

Space and publication practices preclude the mention by name of the many people to whom the authors express gratitude for their guidance, expertise, and support.

Virtual Fleet Support for CAD/PAD

A Business Systems Re-engineering Success Story

Dave Williams ■ Dale Thomas ■ Tony Taylor

Sometimes things *must* work, and that's the case with ejection seats and other emergency systems in military aircraft. Every day, without much thought to their survivability, aviators strap into jets and push the limits, dominating air warfare globally. They know that if necessary, they can eject—and they take great comfort in knowing that even if they lose the jet, they have a high probability of living to fly and fight again.

What does it take to foster such confidence? Thousands of men and women working for the Services, supporting a military-unique product line: Cartridge Actuated Devices/Propellant Actuated Devices (CAD/PADs), energetic devices that employ explosive compositions to provide the power required to position and eject the aircrew in a timed sequence of events, the timing measured in milliseconds.

CAD/PADs are used in aircraft ejection seats, weapons release, and fire suppression systems. The Department of Defense uses about 3,100 different configurations. CAD/PADs, needed for safe flight, can cause the grounding of aircraft if they are defective or past their service life. The CAD/PAD Joint Program manages engineering acquisition for all Services and sustainment for the U.S. Navy, Marine Corps, and Air Force. Perishable, like any product—aspirin and other drugs, for example—that depends on chemical mixes, they must

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U.S. Navy photo by Photographer's Mate Airman Jordon R. Beesley

Williams is the director of the Cartridge Actuated Device/Propellant Actuated Device (CAD/PAD) Joint Program Office located at Indian Head, Md. He received his bachelor's degree in mechanical engineering from Tri-State University in Angola, Ind. **Thomas** is the assistant program manager for logistics in the Navy's Program Office for Conventional Strike Weapons, and he is the fleet support team leader. **Taylor** is a consultant to the Joint Program. He is a retired Air Force Reserve colonel and former director of the U.S. House Science and Technology Subcommittee on Transportation, Aviation and Materials.

be replaced often. Within the Navy and Marine Corps, CAD/PADs generate up to 90,000 supply and maintenance transactions each year, and because of their explosive nature, they must be returned for demilitarization and disposal.

Historically, the effort to manage the hundreds of thousands of maintenance and supply transactions created a significant burden on sailors and Marines responsible for the paperwork required to order and receive the products, to manage and schedule maintenance, and to replace expiring parts in the aircraft. In recent years, there has been increasing emphasis on implementing smart business practices in the defense community. Virtual Fleet Support (VFS) is a successful initiative of the CAD/PAD Joint Program Office to apply commercial practices and Web technology to streamline many of the formerly labor- and paper-intensive processes associated with sustainment of CAD/PAD.

The Key ... Automation

VFS is a Web-based system for managing the full range of data used by the chain of entities responsible for aircraft sustainment, from the wrench turner on the flightline, to the support system, to the affiliated industrial base. It automates the processes by which sailors and Marines order, report, and track the CAD/PAD and by which they obtain safety information and training. In essence the system:

- Automates the business practices linking the flightline aircraft maintainers, ordnance logistics and supply systems, and the fleet support team in the Joint Program Office
- Moves users from administrative tasks to mission tasks
- Ensures data are input once only—at the source—then are used by all
- Employs safety, logistics, engineering, acquisition, maintenance, and supply data within a single automated life cycle support process
- Automates supply ordering using fleet maintenance data, eliminating fleet requisitioning
- Completes work for the fleet maintainers, instead of workloading them.

Achieving these goals has resulted in automated business processes and elimination of paperwork, such as archaic naval messages, and it has made possible the concept of data as a corporate asset, available to all in real time.

The Old Way

Before VFS, the Navy CAD/PAD Program at Indian Head, Md., relied on an intranet to carry out various technical, logistics, and program functions. A central database held key data affecting the sustainment of CAD/PAD. The system successfully facilitated several centralized responsibilities, such as budgeting and procurement of replacement items. But it had a significant limitation. Those

outside the program office had to come through the program office to input or receive data. Users at the 780 Navy maintenance activities worldwide sent a diskette each month with tracking information on installed CAD/PAD—a cumbersome process that, at best, produced central information that was constantly out of date. And in some cases, sources maintained costly and inefficient redundant data.

The old system did have some significant successes. One was automation of the requirements determination process using data showing when every CAD/PAD must be replaced. The result was greatly improved accuracy of procurement requirements and a definitive basis for budget justification. With this tool, the program office was able to justify its budget by identifying specific aircraft that would be grounded if cuts were made to the procurement request. This capability has been incorporated in VFS.

The New Paradigm

The previous focus was on collecting data for use by the CAD/PAD program and its chain of command. VFS shifts to managing corporate data for the primary user, the fleet maintainer, and to automating business practices using the data. Each authorized user is able to input directly to the central system. Validation and security routines have been built in to avoid corruption.

The backbone of VFS is the Coredata module in which common life cycle support data are collected and triaged. From Coredata, the CAD/PAD program is able to electronically author an interactive electronic technical manual, usually in a matter of hours, as opposed to months in the prior paper process. The technical manual authoring process includes a multitude of data validation rules to assure accuracy of the data published for fleet and fleet support team use. All other modules link to the published technical manual for common data.

Aircraft-Installed Asset Management

The basis for maintenance management, procurement planning, and technical support for installed CAD/PADs is the Trace module, which tracks all installed assets. Trace allows the program to maintain a Web-based electronic logbook for the 245,000 assets installed in Navy and Marine Corps aircraft. Previously, each maintenance activity kept its logbooks in an MS-DOS-based program on a standalone computer and sent a monthly disk containing updates to Indian Head. Shipping losses and lag time in receiving the disks diminished the accuracy of the data in the central database.

Today, fleet maintainers are able to manage aircraft and record custody and to make centralized logbook entries directly, when, for example, a damaged or expended CAD/PAD is replaced. As service lives change, logbooks

are updated and automated e-mail notifications sent to custodians detailing changes made on their behalf. One recent series of service-life changes affected over 200 CADs, with over 35,000 logbook records updated—without the fleet's taking a single action.

Service-Life Extension

About 400 times each year, because of operational tempo, deployments, or part shortages, users request a service life extension of installed CAD/PAD to keep an aircraft in flying status. Previously, mechanics had to visit the logs and records shop to transcribe key information on the subject CAD/PAD and retype the information in a naval message, adding only the length of extension needed and the reason. The message was routed through three levels of approval and sent to the program office for processing.

The performance of CAD/PAD varies depending on the manufacturer or the ingredients; and with hundreds of product designs and thousands of lots in service, the worst performer determined the stated service life. But engineers are able to review the performance data for a given lot and approve an extension in many cases. The review, associated paper work, and approvals could take a week or more. Rather than request an extension, the fleet often chose to ground the aircraft and change the item at an undesired time.

CAD/PADs, needed
for safe flight,
can cause the
grounding of
aircraft if they
are defective or
past their service
life. Perishable, like
any product that
depends on
chemical mixes,
they must be
replaced often.

Under VFS, with Web-enabled CAD/PAD data, a mechanic can access the item's record and submit a request, all with a few clicks of a mouse. In the program office, engineers have developed a parameters database that allows an automated response to the request in most cases. If the request falls within acceptable parameters, the computer grants it, the logbook is updated automatically, and key individuals are notified of the change by e-mail. The whole transaction now takes only a few minutes. If the request falls outside an acceptable range, it is forwarded to the responsible engineer for further analysis and response. Since VFS became available, the number of service life extension requests has increased fivefold, resulting in a significant reduction in the maintenance burden.

Web Ordering: The Next Step

In 2001, the Joint Program won the David Packard Excellence in Acquisition Award for re-engineering the requisitioning process from the deckplate perspective and for implementing an innovative 1-877 telephone system for ordering and re-supplying CAD/PAD. The 1-877 project was the first to use maintenance data resident within the aircraft logbook (VFS Trace) to automatically create the required supply requisitions, eliminating the need for fleet maintenance and ordnance supply personnel to create and process over 11,000 requisitions annually. The Web Ordering module of VFS takes the next step, providing the first Web-based capability for ordering explosive parts.

Previously, ordering replacement CAD/PAD required 18 paper-intensive steps involving four entities: the requesting squadron, the host base weapons department, the Navy CAD/PAD inventory manager, and the stock point at Indian Head or Seal Beach Naval Weapons Station, Calif. Many requisitions were lost, and 62 percent of deliveries were late. As a result, CAD/PAD were viewed as hard to get, and squadrons often stockpiled assets as a hedge, leading to shortages elsewhere. The benefits of a just-in-time acquisition system were lost because of a "just-in-case" supply approach.

Using an aircraft's electronic logbook, the flight line mechanic is now able to determine all the items that will expire before the next scheduled maintenance and place an order in just a few minutes. The module validates the need and produces the required supply requisitions, "pick list," box labels, and shipping data for the stock point. Shipping is, in most cases, by overnight commercial carriers. VFS automatically sends order confirmation and shipment tracking information by e-mail to interested personnel. Management actions by the weapons departments are significantly reduced and those of the inventory manager minimized.

The results have been striking. Where an order used to take up to 120 days, it now takes about eight, which has

allowed the fleet to reduce significantly the amount of inventory it holds. In addition, Web ordering automatically calculates ship load-out requirements for deployment, based on the aircraft assigned to the embarking air wing. A sailor enters the squadrons planned to be on board, and VFS calculates the type and quantity of CAD/PAD needed, considering the item's damage history and the likelihood the part will be needed during the deployment. This allows ships to take less than half the emergency stock previously carried.

An unanticipated benefit of the Web Ordering and Service Life Extension modules' working together is additional savings. Now, whenever the fleet places an order for replacement CAD/PAD, VFS determines whether a service life extension can be granted instead and initiates the extension process if possible. In 2003, this resulted in over 1,100 such extensions, again eliminating unnecessary work for the mechanic.

Technical and Safety Data Management

Previously, the CAD/PAD technical manual contained over 3,000 pages and had a distribution to more than 3,500 sites. The burden associated with maintaining the manual is illustrated by the following: Interim rapid action changes (IRACs), which typically impact 15 to 20 pages of the manual, required each manual "owner" to apply the changes to his or her copy. With VFS, fleet maintainers are able to access a level 4 interactive electronic technical manual (IETM) that is "authored" using the central technical database. In 2003, the workload avoided because changes to the IETM are managed centrally by VFS was equivalent to over 860,000 page changes (IRACs multiplied by the typical number of pages per IRAC, multiplied by the number of manual owners).

Disposition Information and Instruction

The Disposition Information and Instruction module implements the Military Munitions Rule for excess, over age, and unserviceable CAD/PADs. The rule imposes new requirements for determining when military munitions are hazardous waste and, therefore, must be subjected to certain environmental controls. Within this module, users may request and receive disposition instructions via the Web. While most disposition requests are routine and handled automatically by systems operated by the item manager, many activities have no access to the compartmentalized ordnance supply system, and many items are found with obliterated or missing identification markings. The disposition module fills the reporting gaps for non-routine requests and will also produce a series of executive reports to assist program officials facing environmental audits.

The Payoff

This initiative shows conclusively the power of creative re-engineering applied to sustainment processes. Initial

The performance of
CAD/PAD varies
depending on the
manufacturer or
the ingredients,
and with
hundreds of
product designs
and thousands of
lots in service, the
worst performer
determined the
stated service life.

estimates of the manpower savings were 50 work years for the 1-877 reordering system and up to 100 work years for VFS. Ongoing analysis of the implementation indicates that these estimates have been met or exceeded. Cost savings and procurement efficiencies are also being realized. Typical of the response from the fleet was the comment of Petty Officer First Class Jeanna Saccomagno, formerly with VFA-106 in Oceana, Va. She said, "We used to assign one person, actually the CAD petty officer, who would come in every day, all day, and work CADs. Now that VFS is online, one person spends 10 minutes one day a month to order CADs for all [the squadron's] jets."

Perhaps as important, VFS is giving local fleet personnel a much greater ability to interact with and control the sustainment processes that affect their missions, leading to greater confidence and more efficient management of those processes, with less time devoted to administrative tasks and more time devoted to direct mission support of the warfighter.

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The Special Challenges of Leading Geographically Dispersed Teams

Col. James F. Geurts, USAF

“As is true with most technological innovations, our understanding of how information systems change the human system dynamics in organizations has lagged behind the introduction and use of new technology. We are using advanced information technology to lead and to follow without necessarily knowing the full extent of its impact on human dynamics in organizations. Is it working?”

Bruce Avolio
Organizational Dynamics
Jan. 2003

quisition workforce is continually challenged to do more with less. In 2000, the Department of Defense inspector general reported that the DoD had cut over 50 percent of its acquisition workforce between fiscal year 1990 and fiscal year 2000, while the number of procurement actions had increased by 12 percent. These changes have put tremendous strains on government program management offices, and many have turned to geographically dispersed teams (GDTs) as one means to mitigate the impacts. Unfortunately, many government acquisition organizations have implemented GDTs before fully understanding how to most effectively lead and employ them.

Management theories in the 20th century focused on the power of collocating teams to form interdisciplinary product teams, and they linked the social interaction of a collocated team (CLT) with its overall productivity. Some programs, such as the U. S. Marine Corps Expeditionary Fighting Vehicle, went as far as collocating the developer/producer, overseer, and end user. Collocating 100 percent of a team can be expensive and impractical. Furthermore, personnel shortages and burdensome travel requirements force most traditional collocated teams to work in a geographically dispersed manner much of the time. Recent studies on the management of GDTs tend to focus on the implications for IT systems of geographical distribution. While IT tools are important, there are two key questions when considering the implications of GDTs: how GDTs affect traditional leadership and management models, and how distance factors (geographical, temporal, cultural) affect teamwork and intra-team communications.

The answers to these questions have a profound impact on the effective management of DoD acquisition programs that employ GDTs, as well as on the management of traditional program offices, which are so understaffed and overburdened with travel requirements that in fact, they act as pseudo-GDTs. I found many of the program management and leadership skills I used when leading a collocated integrated product team were not applicable “as is” when leading a GDT. I also found that once de-

The world we live and work in is changing at an accelerating pace. Information technology (IT) improvements enable information sharing faster than leadership and team-building theories can synthesize the impacts on organizational design and team dynamics. At the same time, the government ac-

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veloped, a GDT could become a formidable team with many advantages over collocated teams.

**Geographically Dispersed, Collocated—
What are the Differences?**

The Center for Creative Leadership defines a GDT as a team that “has members dispersed across distance and time, who are linked together by some form of electronic communications technology, and who are only able to physically interact as a team on a limited basis.” Conversely, CLTs are teams “typically operating in the same location with close physical proximity, whose members can have face-to-face meetings on a regular basis.” The Center notes that while GDTs are not new, the global work environment and IT tools now support greater diversity in the geographic and temporal makeup of teams. There can now exist teams that integrate groups working in different locations, different time zones, and different cultures. These changes have implications on how leaders form teams, organize work, measure individual and group performance, reward team members, and make decisions. They also affect how teams communicate with each other, share knowledge, and identify and resolve issues.

Research summarized in the Center for Creative Leadership’s 1999 book *Geographically Dispersed Teams, An Annotated Bibliography*, indicates that most of the attributes of a CLT generally apply also to a GDT. Findings suggest, too, that collocated and geographically dispersed teams develop similarly in content, but they differ at the rate at which they progress through traditional team-building development cycles. In fact, McLeod et al. reported in a 1997 article in the *Journal of Applied Psychology* that GDTs tend to generate more ideas than CLTs in the same amount of time. In decision making, workers in GDTs expressed their opinions more candidly, but the arguments of GDT members with the minority opinion in a decision-making process had less influence than those of collocated team members.

**Representative F-35 Mission Systems IPT
Team Composition (2002-2003)**

Service	Location	Percentage of Team
Home office (all Services, U.K.)	Crystal City, Va.	20%
Navy/USMC (NavAir)	NAS Patuxent River, Md.	20%
Navy/USMC (NavAir)	NAS China Lake, Calif.	20%
Air Force (ASC)	Wright-Patterson AFB, Ohio	20%
DCMA (on-site support)	Ft. Worth, Texas, with prime	5%
Joint Test Force	Multiple sites	5%
Air Force (ESC)	Hanscom AFB, Mass.	3%
Air Force (AAC/53rd Wing)	Eglin AFB, Fla.	3%
Navy/USMC (NavAir)	Pt. Mugu, Calif.	2%
International	Bristol, U.K.	2%

**There are two key questions
when considering the
implications of GDTs: how GDTs
affect traditional leadership and
management models, and how
distance factors (geographical,
temporal, cultural) affect
teamwork and intra-team
communications.**

The differences between GDTs and CLTs also influence how team leaders assign tasks, measure progress, and assess performance. This change is problematic for managers accustomed to managing a CLT because they can no longer see all their employees accomplishing the work. No longer able to rely on informal methods (coffee breaks or walking the floors, for example) to assess performance and detect problems, they must also develop new methods to collect information. R.F. Marucca, writing in the *Harvard Business Review*, notes that GDT managers tend to feel “disconnected” from subordinates, no matter what IT tools they use.

**Using GDTs in Government Program
Management Offices**

GDTs exhibit strengths and weaknesses when compared with traditional CLTs. Program managers must be aware of these as they develop their organizations and choose leadership and management approaches. The analysis of the strengths and weaknesses in the sidebar on the next page is based on my experiences leading both types of teams. It assumes that large portions of the program management office are separated from the location of the program manager so that frequent (more than once-a-month) face-to-face visits are impractical.

**Lessons Learned From the Joint
Strike Fighter Mission Systems IPT**
I spent two years as the F-35 Mission Systems IPT leader in the Joint Strike Fighter Program

The Geographically Dispersed Team

Strengths

- Enables greater diversity of opinions and ideas, and access to more people with a potentially wider experience base and expertise.
- Requires early transition to a knowledge-sharing organization for survival, as knowledge cannot be passed through informal coffee break conversations and water cooler talk.
- Enables use of differing hiring practices or support contract vehicles to gain additional human resources, since PMs are not constrained to hire only at their locations. This is especially useful in mid-year surge situations.
- Allows greater continuity of operations when large percentages of the program management office are traveling, since by design, the GDT is better equipped to function while dispersed.
- Forces clearer delineation of roles, missions, and task assignments.
- Tends to isolate a portion of the team from the daily fire drills of the PM, allowing those members to better focus on their specific tasks instead of being caught up in the PM's problems.
- Enables/facilitates alternate work schemes (such as telecommuting) and operations across multiple time zones, such as 24-hour development teams and 24-hour service support.

Weaknesses

- Potentially takes longer for the team to form and gain cohesiveness. New members can disrupt team dynamics if they enter the team in mid stream.
- More difficult to assess individual performance of off-site members.
- Cohesiveness between leader and off-site subordinates may be reduced or take longer to form, as there is limited social interaction outside the work environment. The same phenomenon can occur between teammates located at different sites.
- It is much more difficult for the leader to impact individual rewards and career progression of team members because administrative control, performance bonuses, and so on for those team members located at a different site usually remain with the home-site functional organization.
- It is difficult to schedule meetings at a time when everyone can participate; the PM cannot easily assemble the team in one place for "all call" meetings.
- There is heavy reliance on uninterrupted IT services.
- Over-dependence on e-mail can create an environment in which GDT members feel they need to check e-mail 24 hours a day.
- There may be a real or perceived feeling that members who are not located with the PM are second-class citizens who don't get the same opportunities and visibility as those members collocated with the PM.

The use of GDTs within DoD acquisition will expand as the downsizing of the acquisition workforce continues in future budget years.

Office. This IPT was a multi-national, multi-Service GDT with members from the Air Force and Navy/Marine Corps tactical aviation product centers, weapons test centers, and international offices. The composition of the IPT at the time is shown in the table on the previous page.

As leader for this multi-Service, multi-national, multi-site IPT, I quickly became aware that I would have to modify my leadership style to deal with the distributed nature of the team and the different cultures. Time zone differences meant there were only two hours in a day when all team members were in their offices simultaneously. I chose to organize the team by product area, but I specifically mixed membership on each of the product teams with members from multiple sites, rather than assigning a separate product to a specific site (for example, the Air Force manages the radar, the Navy manages data links, and so on). This practice enhanced team cohesiveness and better captured each Service/country's experience operating a particular product in their peculiar environment. This team composition was challenging; however, its diversity in Service culture, experience, and business practices created synergies and knowledge sharing at a level I have not experienced on other teams (including other joint teams). In many cases, this diversity allowed us to cherry pick the best processes, skill sets, and tools from each of the respective acquisition organizations.

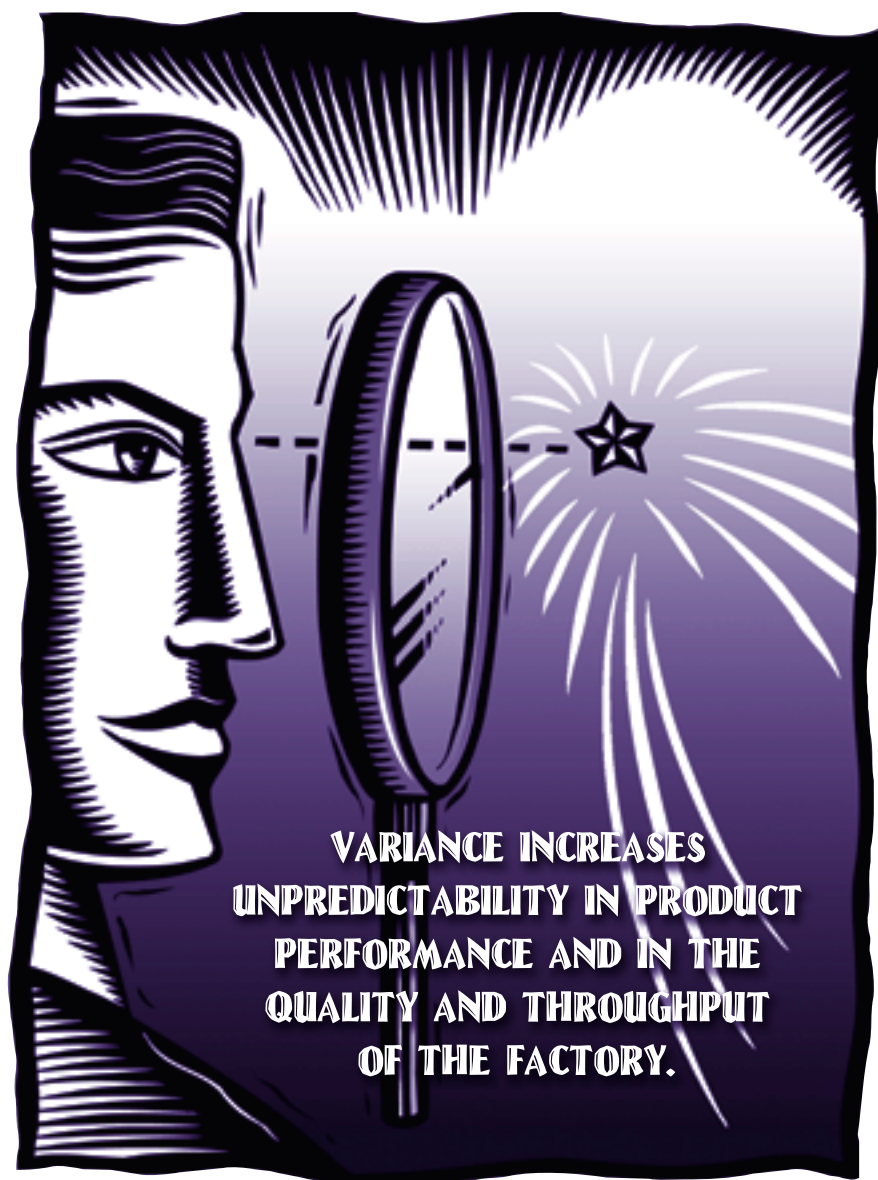
As part of the team development process, I held an off-site meeting to enable team members to build relationships that they would have to sustain in a geographically separated manner during execution. As part of this process, we jointly defined the following attributes of a healthy and successful GDT. Teams should:

- Be continually informed of the team's strategy
- Be involved in decision-making processes
- Receive regular communications
- Be provided with tools for communication
- See each member's efforts as contributing to the success of the team's strategy
- Have a leader who will provide feedback and stand up for the individuals on the team
- Be given an opportunity to have fun outside work.

Continued on page 66

Introduction to Variability and Variation Reduction

Bill Motley



systematic reduction of variability in key product features and manufacturing processes. If you are involved in implementing lean production techniques and/or Theory of Constraints and Six Sigma initiatives, you will be involved in identifying and reducing sources of variability in design concepts, manufacturing processes, process cycle times, and test/measurement systems. Product features, manufacturing processes, or material characteristics whose variations can very adversely affect performance, safety, or mission execution are increasingly denoted by the terms “key” or “critical” on drawings and specifications. SAE Standard AS9100B defines a key characteristic as “the features of a material or part whose variation has a significant influence on product fit, performance, service life, or manufacturability.” There is still not a consistent use of the terms key and critical, so it is important that a manager know what specific definition is being used.

“Variation” can be defined as any unwanted condition or as the difference between a current and a desired end-state. Both product performance and manufacturing processes exhibit variation. To manage and reduce variation, the variation must be traced back to its source. Variation occurs in all natural and man-made processes. If variation

cannot be measured, it is only because the measurement systems are of insufficient precision and accuracy.

Problems and Their Results

Variation creates numerous problems. If we assume our performance and manufacturing specifications have been

Modern engineering design, manufacturing engineering, and quality assurance embrace variability reduction as a primary means of improving product performance and reducing product defects. In many firms today, a primary goal of engineering efforts is the continuous and

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**NO TWO
PRODUCTS OR
CHARACTERISTICS ARE
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ANY PROCESS CONTAINS
MANY SOURCES
OF VARIATION.**

established correctly, any deviation from the target goal will result in degraded system performance and/or defective components. Variance increases unpredictability in product performance and in the quality and throughput of the factory. Process variance reduces the capacity of the factory because processes become either under- or over-utilized. Process variance reduces our ability to detect potential problems and increases the difficulty of discovering the root cause of problems.

The causes of variation in product performance and manufacturing processes will vary by the type of technology, its maturity, and the experience of the organization and its suppliers.

There are four major sources of variability in technical processes:

- Insufficient design margins resulting from poor design practice, unrealistic requirements, and requirements creep. Also contributing are poorly defined operating environments and inaccurate design reference mission profiles.
- The inherent variability of any manufacturing process. Every factor in a manufacturing process (manpower, materials, work methods, machinery, and measurement) possesses inherent variability.

No two products or characteristics are exactly alike because any process contains many sources of variation. For example, the diameter of a machined shaft is susceptible to variation from the machine, tool, material, operator, maintenance, and environment. Some sources of variation in the process cause very short-run, piece-to-piece differences—for example, backlash and clearances within a machine and its fixturing. Other sources of variation tend to cause changes in the output only over a longer period of time, either gradually as with tool or machine wear, or irregularly, as with environ-

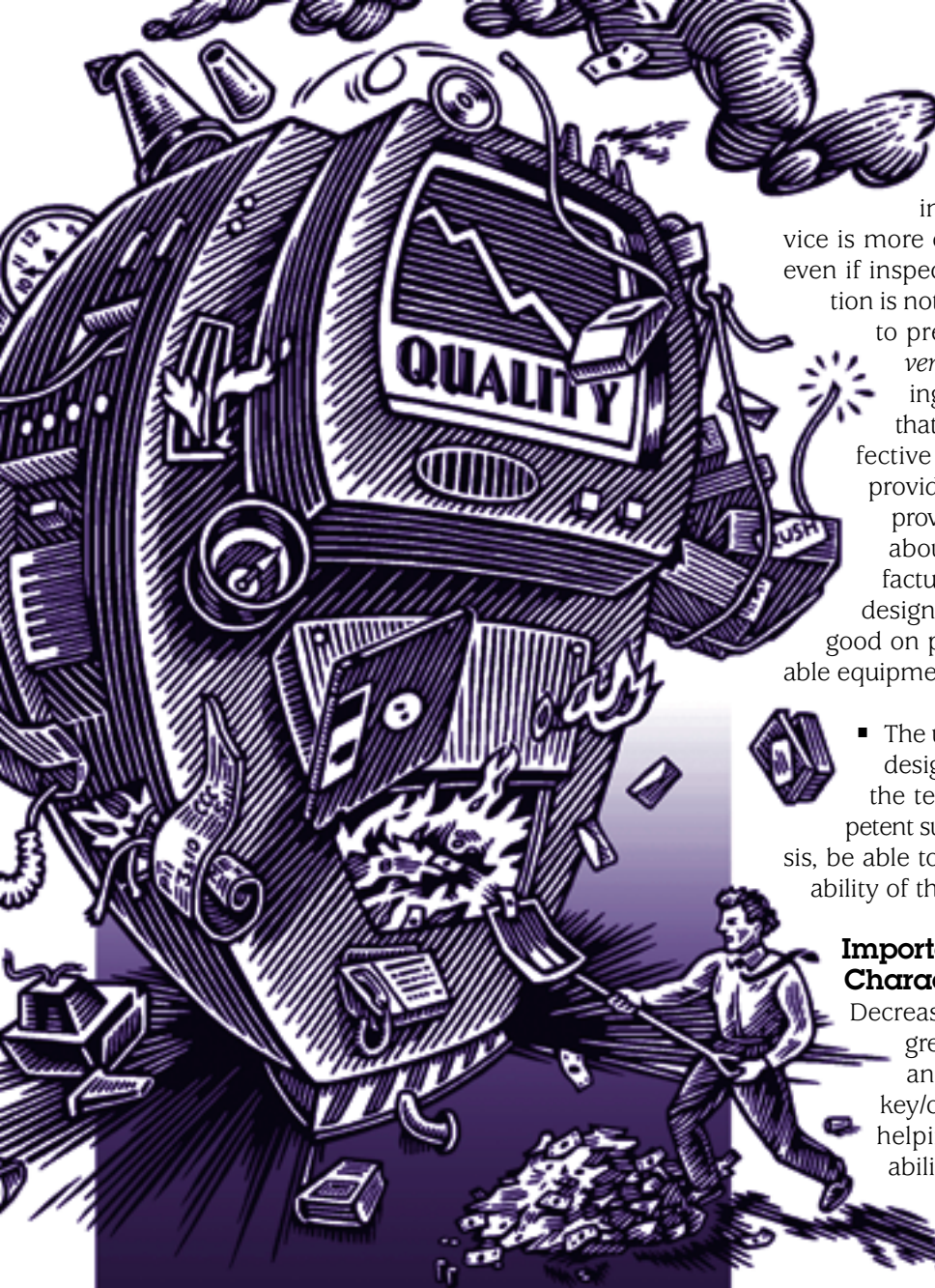
mental changes such as power surges. Changes in ambient conditions (temperature, humidity, and barometric pressure, etc.) also affect manufacturing processes.

- Measurement systems all possess inherent variability, even if properly calibrated. Several large manufacturing firms believe that variability in their measurement systems initially contributed 20–25 percent to the problems and defects found on their shop floors.
- Variable products provided by subcontractors and vendors. Piece-parts and subsystems are all variable for all the reasons presented in this article. As prime contractors continue to outsource more of their systems, the variability of components—to include physical interfaces—becomes increasingly important.

Counters to variability in product performance and in manufacturing processes include:

- Stable, realistic requirements, which include well-defined operating environments and accurate design reference mission profiles.
- A design process that includes producibility as a major requirement. Design for producibility focuses on ease of manufacture, which should result in lower piece-part counts and fewer opportunities for defects. Through the use of formal training or integrated product and process teams, design engineers must be made familiar with the capabilities and limitations of the shop floor.
- The use of proven, mature manufacturing processes whose capabilities are well documented, both statistically and empirically.
- The use of statistical tools—such as designed experiments, statistical process control, and analysis of variance—on the manufacturing shop floor. These tools ensure that processes are both capable and predictable.

The traditional situation depends on production to make the product and on quality control to inspect the final product and screen out defects. This is a strategy of detection. It is wasteful because it allows time and materials to be invested in products or services that are not always usable. In the first place, 100 percent inspection is too expensive. It's an activity that costs money but doesn't bring in any additional revenue from the customer. To put it another way, the customers pay for the parts shipped, and inspections don't result in any additional good parts being shipped. One hundred percent inspection is also limited in usefulness because it cannot contribute to defect prevention and productivity improvements. Inspection activities are always lim-



INSPECTION ACTIVITIES ARE ALWAYS LIMITED TO REACTING TO THE PAST; THEY CAN FIND DEFECTIVE PARTS ONLY AFTER THEY HAVE BEEN PRODUCED.

ited to reacting to the past: they can find defective parts only after they have been produced.

Finally, 100 percent inspection is never entirely achievable. A motivated inspector working under good conditions doing repetitive industrial measurement typically fails to take notice of 20 percent of the defective products inspected.

The comment is sometimes made that inspection could be more dependable through use of automation. There is truth in that, since an automatic inspection device is more consistent than a human. Nevertheless, even if inspection is automated, 100 percent inspection is not directed towards controlling the process to prevent defects. What is needed is a *prevention* strategy that provides manufacturing personnel with immediate feedback so that corrective action can be taken before defective product is made. Statistical techniques provide this strategy. Statistical techniques also provide invaluable feedback to the design staff about the abilities and limitations of manufacturing processes. Such feedback helps the design staff avoid producing designs that look good on paper but cannot be built with the available equipment.

- The use of subcontractors and vendors whose design and manufacturing processes employ the techniques discussed in this article. Competent subcontractors will, through statistical analysis, be able to show continuous reduction in the variability of their products and processes.

Importance of Defining Key Characteristics

Decreases in variability will eventually result in greater product performance, fewer defects, and lower manufacturing cost. The use of key/critical characteristics is a powerful tool in helping identify and reduce sources of variability.

It is important that variation reduction efforts are applied to only those features and processes defined as key or critical based on human safety and/or mission-essential performance. There is a strong tendency by technical managers and engineers to use key characteristics indiscriminately, and when that happens, they lose their meaning and impact.

Key/critical characteristics are a powerful tool for communicating to everyone in the organization what really is important and deserving of increased attention and resources. An increasing number of commercial firms are making key characteristics a non-negotiable technical requirement. If a feature or process is marked "KEY," there can be no waivers or deviations allowed.

The author welcomes comments and questions and can be reached at bill.motley@dau.mil.

Make Room for Generation Net

A Cultural Imperative

Maj. Dan Ward, USAF

Is it possible to effectively collaborate online with someone you've never met face to face?" This question was raised at a recent workshop for Intelligence Community members, and it received a tentative and hesitant "Yes ... maybe ... well, no, not really," from the retired general who was leading the discussion. What it *should* have received is good-natured laughter and a call for *serious* questions from the floor. *Of course* people can effectively collaborate in cyberspace with people they have never encountered in "meat" space. It happens all the time. Just ask any teenager.

Why did no one laugh at this absurd question? Perhaps because their life experience didn't enable them to see the humor—which is an indirect way of saying they were probably too old to get the joke. At the ripe old age of 30, I was the youngest person in the room by at least a decade. Most of the primary participants appeared to be 20 years my senior, and the presiding (retired) general mentioned his 40 years of government service several times. No wonder this crowd found net centricity and on-line collaborations such tough nuts to crack.

The GenNet Experience

Please don't misunderstand. These people were very intelligent and technically savvy. It is not a question of their not understanding modern technology. There was an impressive amount of mental fire-power and loads of experience in that room. The problem was a shortage of

GoJoBananas (dot-com, of course) will sell you a JoBananas Club water dish for your cat or dog that automatically sends you an e-mail or text message when the bowl is empty.



relevant experience. I am barely young enough myself to have had a PC in high school, and that first machine was so primitive it didn't have a hard drive. Even in college my computer didn't have a mouse, a GUI, or a modem (let alone the World Wide Web). In Internet time, I'm already approaching fogey-hood, whether I like it or not; so how much more so these gray-haired workshopers. And coming right behind me is a new generation, of which I am barely on the cusp. Look out for Generation Net.

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Something happens to a person who is exposed to technology at an early age, and GenNet has grown up with the Internet, cell phones, and other fruits of the IT revolution. This exposure affects their understanding of how the world works, it shapes the way they communicate—imho (and if you don't know what that means, you'd better check out <www.netlingo.com/emailsh.cfm>)—and it influences the way they establish and maintain connections with other people. These new technologies and methodologies are not the sole property of the young, but their impact on a person is largely proportional to the age at which he or she is introduced. If your world has always included things like Google, Instant Messaging, and Amazon.com, you are going to view the world differently from those of us who grew up without them.

An (Un)Wired Water Bowl?

An Associated Press article by Martha Irvine recently pointed out the Internet has “created a different (wider/more inclusive and persistent) notion of community” for GenNet. Steve Jones, a senior research fellow with the Pew Internet & American Life Project, put it this way: “Students are continuously connected to other students and friends and family in ways that older generations would never have imagined.” This focus on connections shapes the way they live, work, and play. It even finds expression in something as apparently trivial as making sure a pet has water.

If all goes to schedule, by the time you read this, GoJoBananas (dot-com, of course) will sell you a JoBananas Club water dish (called “Thirst Alert” and costing less than \$40) for your cat or dog that automatically sends you an e-mail or text message when the bowl is empty. One might wonder how wired you must be if a text message about an empty water bowl will get your attention before you notice the actual bowl itself (or the thirsty pet). The answer is: Not Very. And by the way, nobody says “wired” anymore in the Wild Wireless World in which we live.

What may seem absurdly unnecessary to people of a certain generation is perfectly reasonable to those who are coming of age in The Connected Era. A water bowl that sends e-mail may be a novelty now, but it moves us closer to the day that your refrigerator will tell you (text you) that you're out of milk before you leave work ... an act that will (eventually) surprise and impress *nobody*. The social/cultural/psychological impact of receiving text messages from household appliances and quadruped serving dishes can scarcely be overstated. We ignore it at our great peril.

The Missing Link

OK, back to the aforementioned workshop. When the senior ranking person (a two-star general) pounded the table and said, “I just want [*expletive deleted*] Google on SIPR-net,” his request was perfectly legitimate—albeit some-

what tardy, since Google has been around the civilian world since 1998. Ultimately, the problem is not with his question or his timing, but with his audience. He simply wasn't talking to the right people.

The ones who really get it, who have the Internet in their blood, who understand the power of networks on a visceral level, and who have vast experience with online collaboration and information gathering/creating/consuming/sharing were not in the room—and *they should have been*. On this particular topic, a handful of outspoken lieutenants would bring much more to the fight than a whole bucket of retired colonels. Of course, there are exceptions in every generation, but on that day, in that particular meeting, the proverbial exceptions were either silent or absent.

The problem was a lack of generational diversity. It's not that the individuals involved were too old, but that the group was too homogenous. Their experience base was too similar and monotoned—and *limited*. There is no need to kick any of these seasoned experts out of the room and replace them with kids, but there is a need for program managers and other acquisition leaders to invite GenNet to the table—and sooner rather than later. Generational homogeneity is a less-than-optimal approach for this kind of innovative technical work. Seasoned graybeards and fresh-faced no-beards need to stand shoulder to shoulder because both generations could learn from each other.

Been There, Done That

One of the primary challenges faced by the DoD in general—and the intelligence community in particular—revolves around making the right information available to the right people and doing so quickly, easily, securely, and inexpensively. Who better to tackle this problem than the generation that has already (by and large) solved it? It makes very little sense to gather a room full of 50-year-olds and ask them to chart a course for establishing robust online collaboration capabilities. In the particular case mentioned earlier, the group ended up discussing whether or not one can effectively collaborate with a person whose face you do not know—and frankly it was not much of a discussion.

The GenNet crew understands how online collaboration works because they have done it for years. In fact, they have never *not* done it. They text, they blog, they IM, they have netfriends they've never met. It's the only life they know. Text messages from water dishes are not a big deal in their world. When GenNet enters the DoD in force, they are going to change it radically, particularly as they rise in stature and rank. And this is precisely the kind of change we so desperately need in this post-9/11 world.

Culture Change 101

The conference participants also discussed the need to change the intelligence community's culture and the DoD

in general, moving them towards net centricity and collaborative relationships. The proposed mechanism for instituting this sea change was by means of an edict (another absurd idea that was laughed at by no one). I can't imagine what made them think that approach would work. Significant culture change in the direction of net centricity is indeed coming, but not because someone at the top decided to proclaim "Thou Shalt Change Thy Culture." Change is coming because a new generation is coming, an online, well-connected, network-centric generation. As Howard Rheingold observed in his book *Smart Mobs*, "The Web spread by infection, not fiat." A well-connected, network-oriented generation is going to make sure nothing stays the same. And in my opinion, it can't happen soon enough.

What is this change going to look like? For one, the DoD and the intelligence community are going to function much more like a *community* than they do today. One workshop participant pointed out that many people within the IC don't want to share data and products because their professional identity has long been one of Keeper of the Data. From their perspective, sharing data threatens their sense of job security. In contrast, GenNet members intuitively understand that interoperability, openness, and sharing are what provide the most value in the first place. Ultimately, *not* sharing is what threatens job security, so Data Keepers and other Defenders of the Status Quo should beware as GenNet arrives.

All Aboard The Cluetrain Express

Many logjams, rice bowls, and stovepipes of today are not going to survive the first wave of GenNet, let alone the waves that follow. Hyperlinks do indeed subvert hierarchy, as *The Cluetrain Manifesto* proclaimed, which is a short way of saying that direct connections to people and data will obviate the need for (and disrupt the function of) official communication channels and other formalized structures designed to limit access to people and data. All the red tape and all the delays won't go away, but they will indeed be subverted—and that is a good thing.

At that conference, we also heard about a particular organization that is building an enormous war-room facility where lots of people can physically come together in the same place. What they probably *should* be working on is a system that allows people to work together *as if* they were in the same physical location, without leaving their current duty stations. Projecting a virtual presence



Projecting a virtual presence is indeed possible, but so long as we insist on the necessity of face-to-face gatherings and the overstated value of sprawling physical facilities, we are not likely to direct adequate resources and attention toward implementing true net centricity.

is indeed possible, but so long as we insist on the necessity of face-to-face gatherings and the overstated value of sprawling physical facilities, we are not likely to direct adequate resources and attention toward implementing true net centricity.

GenNet can help us change that once they get in the door. And they will get in the door sooner or later. We need them sooner, so let's make sure we don't stand in the way.

By the way, did you notice I used some acronyms and jargon without defining them? If they puzzled you, now would be the time to start getting with the GenNet program.

The author welcomes questions and comments (but not by snail mail) and can be reached at daniel.ward@rl.af.mil.

Building Better Airdrop Equipment

The Army's Low Cost Aerial Delivery System Low Cost Container

Nina Shopalovich

The December 2004 tsunami disaster in Southeast Asia brought about a need for humanitarian relief efforts on an unprecedented scale. The new Low Cost Container (LCC), part of the Low Cost Aerial Delivery System, had recently become available for use in just such contingencies. The LCADS program is designed to provide one-time-use aerial delivery components for use in humanitarian and re-supply missions and to address the need for low-cost airdrop capabilities. The requirements document for the LCC was the result of the lessons learned from U.S. relief efforts during the previous decade.

Learning the Lesson of Learning Lessons

In 1993, during Operation Provide Promise (in which U.S. forces helped keep a multinational lifeline of food and medical supplies flowing into Bosnia throughout nearly four years of war) over \$31 million of standard airdrop equipment was used and never recovered, signaling a need for a low-cost alternative. Since predicting the scope of a humanitarian aid crisis is impossible, stocks of container delivery system (CDS) components used in the relief efforts were greatly depleted. While Operation Provide Promise was ongoing, engineers and technicians at the U.S. Army Research Development and Engineering Command (RDECOM), Natick, Mass., began the analysis and development of several low-cost airdrop components and specialized procedures. The goal was to avoid the complete depletion of all airdrop war reserve stocks of high velocity CDS systems and to reduce operation and support costs. Several alternative materials were used in the redesigns, reducing both the price and the rigging time for both components. At the time, the cost of these standard systems was about \$1,100 each, which included the parachute, container, packaging material, and skidboard. Preliminary testing of these lower-cost components showed promising results. While significant progress was made in developing, acquiring, and—to a degree—implementing various low-cost airdrop capabilities and specialized rigging procedures, once Operation Provide Promise ended, the changes were shelved without testing.



The new low-velocity parachute, the third component of the Army's Low Cost Aerial Delivery System, is to be developed and manufactured by a disabled veteran-owned business.

Following the Operation Provide Promise experience, Training & Doctrine Command (TRADOC)'s Combined Arms Support Command took the initiative and developed an operational requirement for low cost airdrop capabilities, which was validated by TRADOC. However, it remained unfunded as a result of concern among Department of the Army staff that the effort didn't support an Army mission; thus, it should not be an Army requirement nor be supported with Army research, development, test, and evaluation funding.

During Operation Enduring Freedom in Afghanistan in October 2001, there was another great increase in demand for CDS in order to supply Special Forces and Ranger units, as well as to provide humanitarian relief. CDS bundles, which use standard Army A-22 cargo containers for

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both high- and low-velocity aerial delivery, were dropped at a rate of 220 to 360 per day during this operation. The nature of the airdrop missions meant the equipment was non-recoverable, resulting in an estimated cost of \$25 million and once again depleting Army war reserve stocks of CDS equipment to critical levels.

The Army lost valuable information and time by its failure to support or pursue low-cost CDS alternatives during both of these efforts. By the establishment and funding of the LCADS program, it initiated the development and fielding of low-cost airdrop capabilities. These capabilities provide a substantial return on investment, rather than continuing to allow humanitarian relief airdrop missions to incur significant costs and to deplete Army war reserve stocks.

The Challenge: Same Performance, Lower Costs

The most important requirement of the 2002 operational requirements document was for LCADS components to reduce costs by 55 percent (threshold) to 80 percent or more (objective) over current CDS components. The system would have the same performance as CDS: 500 pounds to 2,200 pounds in capacity, capable of being deployed from U.S. Air Force cargo aircraft at release altitudes of 500 to 1,250 feet above ground level for low-velocity airdrop and 15,000 to 25,000 feet mean sea level for high-velocity airdrop with identical load accuracy and survivability. The items developed under LCADS would be interchangeable with the standard CDS component that each was designed to replace so that a standard parachute could be used with LCADS containers and vice versa.

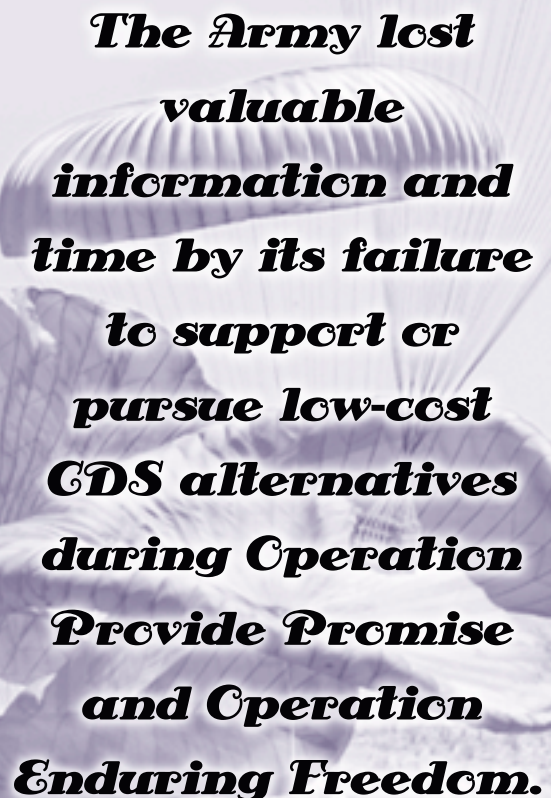
Product Manager Force Sustainment Systems Cargo Airdrop Team, located at the U.S. Army RDECOM in Natick, was assigned the program and initiated it. At once, the LCADS team's attention turned to the light, easy-to-rig container developed by the Natick team at the time of the operation in Bosnia. Like the A-22 cargo container, it could be used for both high- and low-velocity CDS airdrops. Unlike the A-22 cargo container, however, which uses metal hardware and multiple straps of nylon webbing to contain a CDS load, the Natick container used inexpensive fabrics and a simpler design. The container didn't have the durability of the A-22, which can be repaired and re-used as many as 30 times, but this was ideal for its intended purpose. It promised to be a perfect one-time-use alternative.

A sources sought notice was posted to identify domestic products, suppliers, manufacturers, and technical information to develop a low-cost airdrop system. The notice stated the need for a modular suite of airdrop items, composed of parachutes, containers, and other air items configured for low-velocity, high-velocity, and free-drop aer-

ial delivery. All components were to be simple in design, maintenance, and operation; have low production and life cycle costs; and be made of readily available, low-cost materials. They were to be easy to manufacture in order to minimize production lead times and broaden the industrial base. Product characteristics were to minimize or eliminate rigging time, allow for long shelf life, and have low weight and volume.

The Solution: Bring the Project In House

Responses to the sources sought notice were marginal. The most promising idea came from a company describing their concept for an airdrop container. It had been validated through half-scale and full-scale prototypes but at limited weights, speeds, and altitudes. As the Natick low-cost container was further along in the development process than industry's concept, the in-house approach to the LCADS container solution began.



***The Army lost
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Provide Promise
and Operation
Enduring Freedom.***

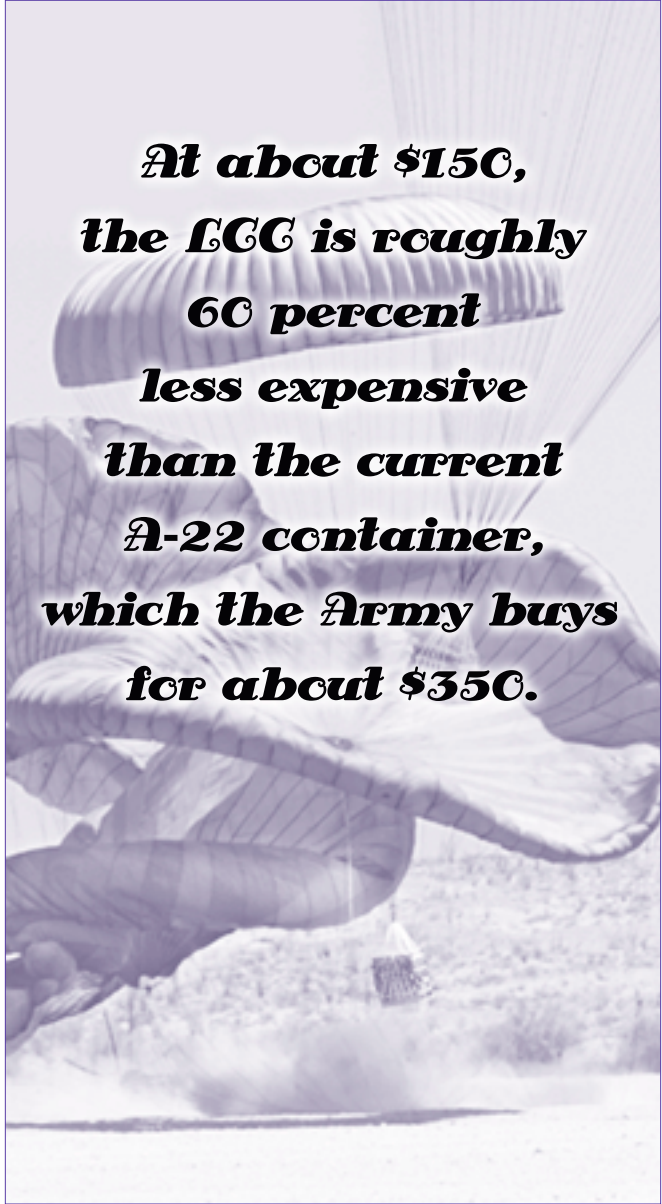
A sole source contract to fabricate test quantities of the LCC built to Natick's drawing package was issued to a small local business that had done work for Natick in the past. Within a few weeks, the first LCCs were being delivered to Yuma Proving Ground, Ariz., and design validation testing began. After a few minor modifications, the program entered developmental testing to determine the reliability of the system. Once completed, operational testing began, with operational users from Fort Bragg, N.C., rigging the CDS loads. Over 300 LCCs were tested containing loads weighing between 500 and 2,200 pounds. Loads were released singly at the start of testing and then ramped up to full plane loads released in a single pass: 16 bundles from C-130 aircraft and 40 bundles from C-17 aircraft. Drops were conducted in both low-velocity environments with the standard G-12 chute and high-velocity environments with the standard 26-ft ringslot chute. The LCC performed without a single mission failure, resulting in a reliability of 0.9945.

At about \$150, the LCC is roughly 60 percent less expensive than the current A-22 container, which the Army buys for about \$350. The cost saving results from use of light polypropylene webbing rather than nylon webbing, and a simplified design that uses less material. Hardware has been reduced to a minimum, with only two friction adaptors and four D-rings. The container is so easy to rig that no training for soldiers is required.

The LCC is the first of three LCADS components to be developed. The second is a low-cost alternative to the 26-foot high-velocity ringslot chute. The low-cost chute is made from 3-foot-wide, woven polypropylene strips stitched in a crosshatch pattern to form 12 legs that give it the look of a giant spider. The chute has completed testing and will be available in late 2005.

First Award Under Service-disabled Vet Business Program

The LCADS low-velocity parachute, third component of the LCADS suite, will offer an alternative to the G-12 parachute. The photograph on page 59 shows a low-velocity chute prototype being tested at Yuma Proving Ground. For the contracting strategy, PM FSS worked with the Natick contracting division and leveraged a new small business program for firms owned and operated by service-disabled veterans. The program (known by the acronym SDVOSB), allows federal agencies to contract directly with an SDVOSB provided it is the only one with the required capabilities. Market research confirmed that BA-Tech, Ltd., of Fall River, Mass., was the only small business owned by a disabled veteran capable of developing and manufacturing test quantities of the low-velocity chute. Contracting directly with BA-Tech shortened contracting time by a minimum of three months, meaning warfighters would get the product faster, so Product Manager Force Sustainment Systems made its first award under the new



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service-disabled veteran program. Both the standard A-22 container and the LCC are used during testing of the two parachutes in order to establish interoperability.

The LCC, the first piece of LCADS equipment to be available to the field, is a source of great pride to the LCADS team. They feel that their program is unique, combining opportunities to save money for the U.S. taxpayers, assist the U.S. military, and provide aid to people in need. The team considers the opportunity to work on such a program a very great honor.

The author welcomes comments and questions. She can be contacted at nina.shopalovich@natick.army.mil.

Mitigating Diminishing Manufacturing Sources and Material Shortages

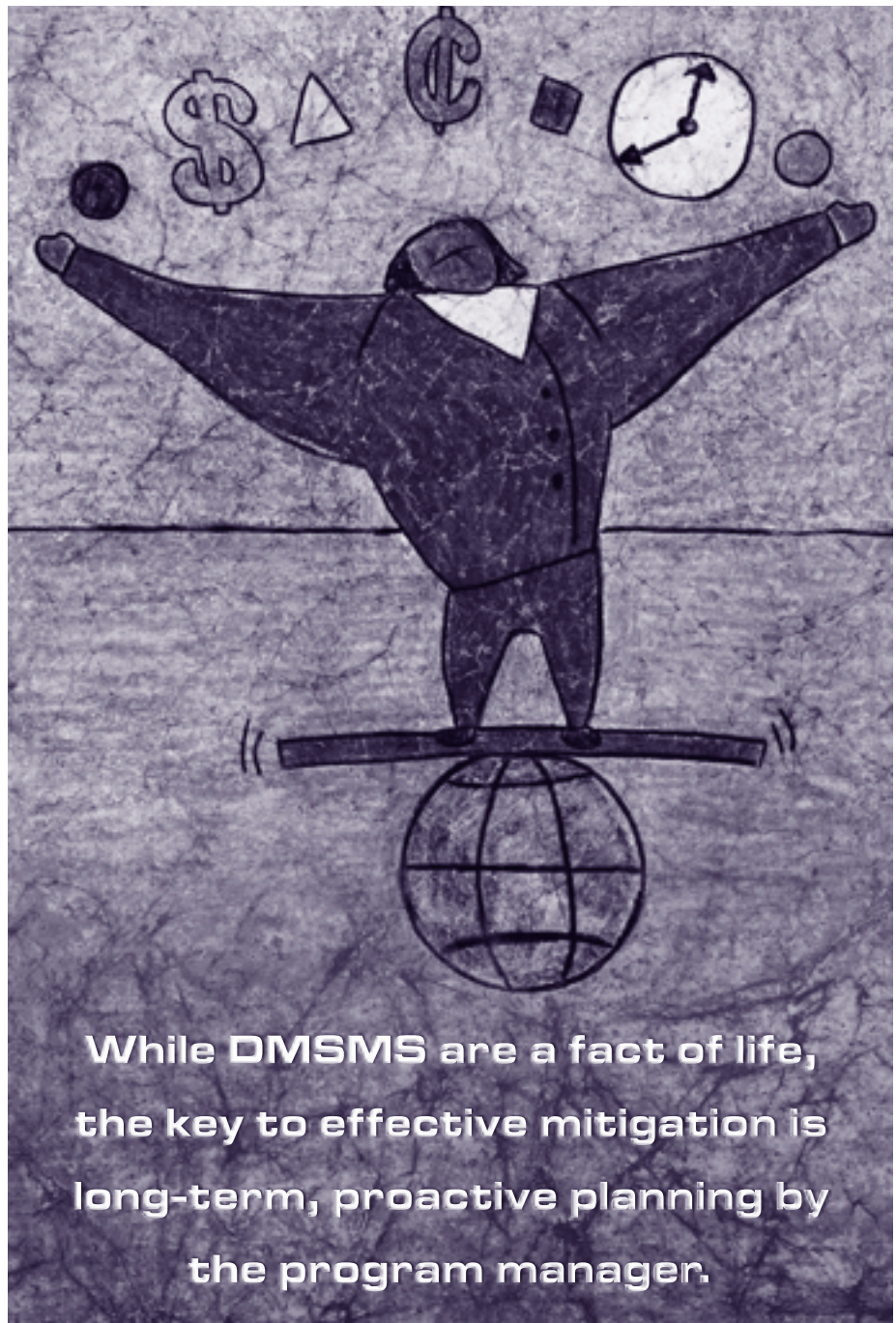
Bill Kobren ■ Alex Melnikow ■ David G. Robinson

According to DoD 4140.1-R, diminishing manufacturing sources and material shortages (DMSMS) are “the loss or impending loss of manufacturers of items or suppliers of items or raw materials which may cause material shortages that endanger a weapon system’s or equipment’s development, production, or post-production support capability.” DoD Directive 5000.1 makes the program manager accountable for total life cycle systems management: “The PM shall be the single point of accountability for accomplishing program objectives for total life cycle systems management, including sustainment.”

While DMSMS are a fact of life, the key to effective mitigation is long-term, proactive planning by the program manager.

The Challenge for the PM

According to the Office of the Secretary of Defense publication *Performance Based Logistics: A Program Manager’s Product Support Guide*, “material obsolescence may occur at the part, module, component, equipment, or other system indenture level. DMSMS obsolescence can occur in any program phase and can severely impact the program schedule, system availability, capability or cost. The PM must insure that performance based logistics product support efforts include an active DMSMS



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process to anticipate occurrences and take appropriate actions.”

Under total life cycle systems management, the program manager must balance traditional acquisition responsibilities for cost, schedule, and performance with life cycle support and sustainment (including DMSMS planning and management). PMs make scarce resource allocation decisions knowing the choice may come down to fielding a less supportable (less reliable) system or pursuing a more sustainable (more reliable) program. The dynamic tension is often acute, and unfortunately, DMSMS planning and funding are not always given the highest priority.

Simply supporting the system is a substantial undertaking, let alone planning for manufacturers of components and parts who may (will) eventually exit the market. So what’s a proactive PM to do? Fortunately, there are ample resources and organizations available to assist.

A Range Of Proactive Solutions

If DMSMS and obsolescence are the problem, technology insertion, continuous modernization, open systems architecture, redesign, modifications, performance-based logistics (PBL), public-private partnerships, commodity councils, evolutionary acquisition, spiral development, and emulation are all tools to help the PM, the life cycle logistician, and/or the DMSMS manager ensure the continued supportability and sustainability of the system.

Possible methods are early identification through shared databases, inter-Service and inter-agency cooperation, and contractor participation; use of predictive tools; life of type buys; aggressive material improvement program and deficiency reporting programs; use of engineering change proposals (ECPs) and value engineering change proposals (VECPs) to upgrade and modernize components while maintaining interchangeability and F3 (form, fit, function); specialty manufacturers; reverse engineering; data rights; and drawing availability.

Committed leadership, proactive planning, stable funding, effective test and evaluation, best value sustainment, and timely execution are all important mechanisms to ensure supportable, operationally available, and mission-capable weapon systems.

Leadership

Along with up-front funding and commitment at the PM level, senior-level commitment, policy, tools, education, planning, and cross-functional collaboration are vital. The Navy, for example, plans to require a formal DMSMS plan for all cognizant ACAT programs other than those slated for retirement prior to January 2007, as well as evaluation of DMSMS as part of their independent logistics assessment process.

**PBL clearly fulfills the
need for continuous
modernization and
obsolescence
mitigation.**

Open Systems Design

According to OSD’s *Performance Based Logistics: A Program Manager’s Product Support Guide*, “open systems design can help mitigate risks associated with technology obsolescence, avoiding being locked into proprietary technology or relying on a single source of supply over the life of a system. ... Spiral development also helps to alleviate obsolescence concerns. However, the PM must insure that performance based logistics product support efforts include an active DMSMS process to anticipate occurrences and take appropriate actions. This can often be carried out by the Product Support Integrator.”

Early and Detailed Planning

Proactive DMSMS and obsolescence mitigation management demands detailed early planning, budgeting, and funding. It cannot begin after the system is in the field.

Teamwork and Cooperation

Cooperation between the government program office and original equipment manufacturer (OEM) is essential well before the Milestone C decision and entry into low-rate initial production, including development and integration of an up-front DMSMS-mitigation strategy in the system’s PBL strategy. The PBL product support integrator should focus on and plan for reliability improvements, continuous modernization, and DMSMS planning for the duration of the product life cycle.

Bills of Material and Parts Lists

These documents are critical components of effective DMSMS management and should be part of doing business under PBL, whether delivered by the OEM to the government or made available in a shared data environment.

Continuous Modernization

By this process, state-of-the-art technologies are inserted continuously into weapon systems to increase reliability, lower sustainment costs, and increase the warfighting capability to meet evolving customer requirements throughout an indefinite service life.

According to the Defense Acquisition University PBL course, there are three additional obsolescence mitiga-

If DMSMS and obsolescence are the problem, technology insertion, continuous modernization, open systems architecture, redesign, modification, performance based logistics, public-private partnerships, commodity councils, evolutionary acquisition, spiral development, and emulation are all tools available to the program manager, the life cycle logistician, and/or the DMSMS manager to help ensure the continued supportability and sustainability of the system.

tion strategies to employ as part of an overarching continuous modernization approach:

- **Engineering Change Proposals.** The ECP process has traditionally been one of the primary tools to mitigate obsolescence. Program and item managers use engineering support contracts with the OEM to implement pre-planned product improvement (P³I) and to respond to product safety issues, manufacturing concerns, and reliability problems while the weapon system is in active production. P³I is a long-range strategy for upgrading weapon systems capability to meet warfighter requirements. A P³I is funded through acquisition funds and executed through engineering changes to production contracts, system retrofit programs, system block upgrade programs, or user-installed modifications.
- **Value Engineering.** The DoD VE program reduces cost, increases quality, and improves mission capabilities across the entire spectrum of DoD systems, processes, and organizations. It employs a simple, flexible, and structured set of tools, techniques, and procedures that challenge the status quo by promoting innovation and

creativity. Furthermore, VE creates incentives for government participants and their industry counterparts to achieve best value solutions as part of a successful business relationship.

- **Performance-Based Logistics.** PBL offers a new and effective way to deal with obsolescence throughout the life of a product. Unlike traditional approaches to modernizing legacy systems, PBL holistically manages the sustainability and availability of weapon systems. As single-point responsibility for system availability shifts to the product support integrator under the program manager, PBL provides a powerful tool for mitigating obsolescence and making continuous modernization a reality for legacy weapon systems.

PBL clearly fulfills the need for continuous modernization and obsolescence mitigation. With PBL, the program manager contracts for availability rather than the logistics elements that contribute to availability. This is a long-term contract with an organic support source or a commercial contract source. The nature of the agreement award is based upon the performance guarantees that ensure a system is truly supported. Under a PBL arrangement, the support provider assumes support responsibility with accountability for meeting documented performance objectives, such as system availability or supply effectiveness. The government is buying output capability at an agreed-upon level and price, rather than purchasing discretely priced logistics elements on a transaction-by-transaction basis. The PBL contractor ensures that all elements of logistics support are available to provide an agreed-upon level of system availability on demand. The PBL supplier has the financial incentive to continuously improve performance because it has a bottom-line impact.

The DoD Program Managers Handbook—Common Practices to Mitigate the Risk of Obsolescence available at http://www.dmea.osd.mil/docs/pmhandbook_rev_d.pdf identifies three levels of practices to mitigate DMSMS:

Level 1 Practices to resolve current obsolete items (some may be considered reactive), are:

- Assign DMSMS focal point
- Conduct DMSMS awareness briefings
- Facilitate internal communication
- Facilitate external communication
- Implement comprehensive DMSMS plan
- Implement parts list screening processes
- Implement parts list monitoring processes
- Resolve current DMSMS items
- Create supportability checklist.

Level 2 Practices to mitigate the risk of future obsolete items (majority would be perceived as proactive) are:

- Conduct DMSMS awareness training
- Perform DMSMS prediction

- Implement DMSMS internal steering group
- Build commercial off-the-shelf list
- Develop DMSMS solution database
- Develop opportunity index
- Create Web site for DMSMS management.

Level 3 Practices to mitigate the risk of obsolescence when there is a high opportunity to enhance supportability or reduce total cost of ownership (proactive activities which may require additional program funding), are:

- Implement circuit design guidelines
- Produce behavioral VHDL [*very high-speed integrated circuit hardware description language*] model
- Conduct technology assessment
- Implement electronic data interchange
- Investigate technology insertion. Also referred to as technology transition, this is the process of applying critical technology in military systems to provide an effective weapon and support system—in the quantity and quality needed by the warfighter to carry out assigned missions and at the best value.

But What if We Didn't Proactively Plan?

What to do in situations where proactive DMSMS planning was inadequate, deferred, or simply never carried out? DoD 4140.1-R identifies a range of options through implementation of “the most cost-effective solution consistent with mission requirements”:

- **Extend production.** Encourage the existing source to continue production.
- **Alternative source.** Use the current item specification to find another source. A smaller company might undertake production that is no longer profitable for a larger company.
- **Convert to Performance-Based.** Convert the existing item specification to a performance-based specification, which provides more flexibility in acquisition approaches and facilitates identifying another source.
- **Substitute items.** Obtain either an existing substitute item that will perform fully (in terms of form, fit, and function) in place of the DMSMS item or one that would satisfy one or more functions but might not necessarily perform satisfactorily in all of them (limited substitute).
- **Redefine requirements.** Accomplish this through applicable engineering support activities, and consider buying from a commercial source. This redefinition may include MILSPEC tailoring. Such a course of action might induce the emergence of additional sources.
- **Emulate.** Use current manufacturing processes to produce a substitute item (form, fit, and function) for the unobtainable item. The use of emulation technology is particularly effective in producing substitute microcircuits.
- **Make a bridge buy.** Make a “bridge buy” of a sufficient number of parts to allow enough time to develop another solution.

- **Make life-of-type buys.** Based on estimated life-of-system requirements, the DoD components may make a one-time procurement of enough material to last until the end items being supported are no longer in use.
- **Reissue GFE.** If a contractor using government-furnished equipment stops production, reclaim the GFE and reissue it to a new source to help establish production capabilities.
- **Reclaim parts.** Recover DMSMS parts from marginal or out-of-service equipment or, when economical, from equipment that is in a long supply or potential excess position.
- **Reverse engineer.** Reverse engineer the item to develop an exact replica through a review of available technical data, testing, physical disassembly and inspection, and analysis of functions performed by the item.
- **Modify or redesign the end item.** Do this to drop the part in question or replace it with another. This option may become more cost effective if the end item contains several DMSMS parts.
- **Replace the system.** The option of replacing the system in which the DMSMS item is used, while viable, may require extensive cost analysis.
- **Maintain inventory.** Require the using contractor, through contractual agreements, to maintain an inventory of DMSMS items for future DoD production demands. This option must be weighed against the cost of the DoD's maintaining an inventory and supplying the items as government-furnished material.
- **Obtain warranties.** Obtain a production warranty, if possible, from the contractor to supply the item or items for a specified time (life of equipment) irrespective of demands.
- **Share information.** Send the involved integrated materiel manager information that was originally obtained from industrial sources about an actual or prospective announcement of a manufacturer's intent to stop production. Such information will allow DMSMS broadcast alerts to be generated, if applicable.
- **Be vigilant.** Maintain post-action surveillance throughout the life of DMSMS items in the logistics system.
- **Remain responsive.** Respond to requests for requirements information needed to decide the best course of action for ensuring continued supply of DMSMS items.
- **Provide logistics support.** Timely responses are required to meet contractor-imposed final action deadlines. For DMSMS cases involving multiple parts and multiple users, establish integrated product teams to coordinate DoD assessment and response, ensuring that adequate logistics support may be maintained for affected weapon systems.

DMSMS Center of Excellence Leads the Way

The Defense Supply Center, Columbus (DSCC), serves as the DLA focal point for DMSMS management. The DSCC DMSMS Office is responsible for the DoD DMSMS Center of Excellence and the Shared Data Warehouse; and

for receiving discontinuation notices, determining affected items-of-supply (parts) within DLA, and advising other managing activities of affected parts. DSCC notifies the using activity of discontinued parts and identifies solutions, such as procuring life-of-type buys and evaluating the use of alternate parts. DSCC also serves as focal point for exchange of DMSMS information with international allies of the United States.

The DMSMS Center of Excellence was developed to encourage communication, education, and cooperation among interested and affected agencies within the DMSMS world, assisting everyone in achieving solutions to DMSMS challenges. The DMSMS Center of Excellence is supported by a cross-Service team, and through its Web portal at www.dmsms.org, it is intended as a single point of access for organizations seeking cost-effective solutions and resources for resolving obsolescence challenges. Benefits to the PM include a cooperative, predictable process for solving obsolescence problems and sharing solutions across the DoD; DMSMS support to small or large programs with limited funding; reduced costs across the DoD; enhanced weapon system readiness; and critical levels of support for the warfighter

The DMSMS Center of Excellence is developing DMSMS computer-based training modules for the DoD and industry workforce on the DAU Continuous Learning Center at http://clc.dau.mil/kc/no_login/portal.asp. DAU and DLA plan to jointly field modules covering DMSMS fundamentals, DMSMS for executives, DMSMS planning for DLA personnel, and DMSMS case studies/tools at approximately four- to six-month intervals beginning later this year.

Planning is Essential

The key to DMSMS mitigation is long-term, proactive planning. According to an April 2001 study by the North American Technology and Industrial Base Organization, "While DMSMS costs are rarely broken out separately, the USAF B-2 SPO conducted a business case analysis in 1997 of the impact of reactive versus proactive DMSMS practices on that system. That analysis concluded that, on average, proactive measures offered a significantly greater return on the investment."

The good news is there are ample resources and tools available to assist proactive PMs and logisticians who have the foresight to take advantage of them. The DMSMS Center of Excellence at www.dmsms.org provides a good starting point for additional information, resources, and related links.

The authors welcome comments and questions. Contact them at bill.kobren@dau.mil, david.g.robinson@dla.mil, and alex.melnikow@dla.mil.

From my experience, I would strongly agree that leading a GDT was different from leading a more traditional collocated IPT. While many of the traditional leadership needs are the same, the GDT appeared to be much more sensitive to the communication methods used by leaders. I also found that I spent much more time thinking about how I could create collocated team-like social/collaborative opportunities through the GDT medium than I would have in a collocated team situation. I could not simply decide to invite the team to an all-hands session, nor could I afford (in dollars or time) to fly the entire team to monthly off-site or team meetings.

I developed the following takeaways for program managers of GDTs. They are the things a leader should consider beyond the other things he or she would normally do as leader of a traditional collocated IPT:

- Hire people (leaders and followers) who can function in a GDT—not everyone can.
- Keep in mind that leadership is more than forwarding e-mails and tasks. Over-communicate with rich context to make your off-site folks feel included and to improve the quality of their support to the team.
- Remember that personal relationships are made one e-mail message at a time.
- Face-to-face meetings are still important. Meet on team members' home turf when possible.
- Seek formal and informal feedback and look for miscommunications. Use multiple sources and techniques, as miscommunication issues are hard to detect.
- Establish regular virtual meeting times in which all team members can participate during their core working hours. Protect that time and use it judiciously, as it is scarce and precious resource.

The Future of GDTs in DoD

The use of GDTs within DoD acquisition will expand as the downsizing of the acquisition workforce continues in future budget years. Leading and participating in GDTs is different from leading and participating in traditional collocated teams, so it's important to recognize the differences and address them early in the team development process. Unfortunately, some program managers believe IT tools are the solution to the complexities of GDTs. While IT tools can facilitate information communication, they will not, in themselves, ensure an effective GDT. Program managers must recognize that in order to capitalize on the opportunities GDTs provide the acquisition workforce, they must modify the traditional leadership and management techniques they are accustomed to using with collocated teams.

The author welcomes comments and questions and can be reached at james.geurts@eglin.af.mil.

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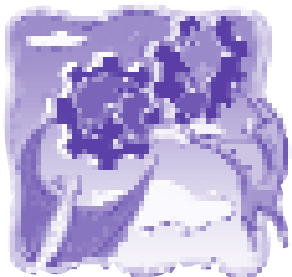
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In the News

NAVAIR PUBLIC AFFAIRS NEWS
RELEASE (DEC. 8, 2004)

OSPREY COMPLETES FINAL SHIPBOARD DEVELOPMENTAL TESTING

Ward Carroll

PATUXENT RIVER, Md.—The V-22 integrated test team conducted Shipboard Suitability Phase for 10 days aboard *USS Wasp* beginning Nov. 12, 2004.

The primary objective of this phase was to complete interaction testing between an Osprey parked on the flight deck and another Osprey hovering in front of it.

Additional test objectives included flight envelope expansion for all port-side landing spots aboard the *USS Wasp*, developing a night short takeoff envelope, and evaluating the latest flight control software version.

“The team was able to get a lot done during our time under way,” said Bill Geyer, the integrated test team’s lead shipboard suitability engineer. “The data we gathered will help us close the book on shipboard developmental test. We’ve given the operational testers and, in turn, the fleet the tools for success at sea.”

While the integrated test team was busy working on *Wasp*’s flight deck, a group of maintainers from tilt-rotor operational test squadron (VMX) 22, the V-22 operational test and evaluation squadron based at Marine Corps Air Station New River, were in the hangar bay conducting maintenance demonstration testing.

Tests included removing both engines, jacking the aircraft and cycling the landing gear, and removing prop-rotor hubs and blade assemblies. The VMX-22 team’s findings will serve them well during the squadron’s upcoming operational evaluation.

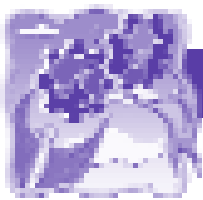
Geyer was quick to attribute the integrated test team’s success to their hosts.

“The *Wasp* was excellent,” he said. “The bridge team went out of its way to get us the winds we needed, and the Air Department was always willing to go the extra



The V-22 Osprey aircraft operate in close proximity during recent flight deck developmental testing aboard the amphibious assault ship *USS Iwo Jima* in the Atlantic Ocean. The Osprey is a tilt-rotor vertical/short takeoff and landing, multi-mission aircraft developed to fill multi-Service combat operational requirements worldwide.

U.S. Navy photograph by Petty Officer 1st Class Mike Jones



mile to get the job done for us. Overall, it was the best experience I've ever had at sea while conducting tests."

This was the fourth and final underway period for the integrated test team since the program's return to flight in May of 2002.

ARMY NEWS SERVICE (DEC. 10, 2004) **ARMY ANNOUNCES PATRIOT MISSILE SYSTEM'S PERFORMANCE IN OPERA- TION IRAQI FREEDOM**

The U.S. Army announced today its investigation into the Patriot Missile System's performance in Operation Iraqi Freedom (OIF). The system was found to be successful in performing its mission protecting troops and assets against enemy tactical ballistic missiles. Patriot systems intercepted all nine Iraqi TBMs they engaged, with nine of nine intercepts resulting in destruction of the incoming enemy missile. The Patriot system undoubtedly saved many lives and prevented significant damage or destruction of millions of dollars of coalition property or to neighboring countries.

Patriot missile operations were conducted on an extremely dense and complex battlefield where more than 41,000 sorties were flown by coalition air forces. Forty-one active duty Army and 13 coalition Patriot batteries were deployed to OIF, serving in eight countries.

Two unfortunate incidents of fratricide or "friendly fire" involving U.S. Navy F/A-18 and British Royal Air Force Tornado aircraft resulted in three fatalities. The U.S. Army regrets the loss of life and expresses condolences to the family members.

In a third incident, a U.S. Air Force F-16 fired on a Patriot battery, but there were no deaths or injuries. United States Central Command (USCENTCOM) concluded their investigations into these incidents, and results are posted on the CENTCOM Web site at <http://www.centcom.mil>. Application of lessons learned in OIF has already improved upon Patriot's performance, and the system will be continuously refined. Improvements include combinations of hardware modifications, software changes, and updates to tactics, techniques, and procedures.

Some changes include the integration of satellite radio technology at the Battalion Information Coordination Central, which provides improved situational awareness through voice and data connectivity with higher headquarters Identification and Engagement Authority as well as enhanced command and control; and software im-

provements that enable better identification, classification, and correlation of airborne objects. In addition, the Army continues to explore and evaluate new opportunities to improve performance and reduce the risk of fratricide.

Patriot remains an important part of an integrated joint air defense system, and its soldier operators receive extensive training in a highly realistic Joint Service environment. The system is a unique and viable weapon that is continuously being upgraded and improved to defend against rapidly evolving threats to the U.S. and its allies.

For further information contact Army Public Affairs, Lt. Col. Tom Rheinlander at 703-697-7589, e-mail thomas.rheinlander@hqda.army.mil.

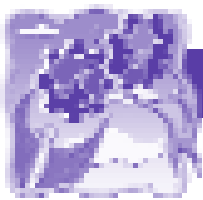
PROGRAM EXECUTIVE OFFICE FOR ENTERPRISE INFORMATION SYSTEMS NEWS RELEASE (DEC. 10, 2004) **COALITION MILITARY NETWORK SUP- PORTS MULTINATIONAL OPERATIONS AGAINST INSURGENTS**

Stephen Larsen

Just in time to support coalition operations to clear insurgents out of Fallujah and other hotbeds, the U.S. Army completed and fielded the Coalition Military Network, a new Internet Protocol-based, network-centric satellite communications system. The CMN provides bandwidth-on-demand services, with high-quality voice capabilities and secure broadband data communications for the coalition's multi-national division, which includes British, Filipino, Korean, Polish, Ukrainian, and U.S. forces.

Implementation of the CMN is part of the Kuwait-Iraq C4 Commercialization (KICC) program, through which the Army is providing enduring communications infrastructure for U.S. and coalition forces. According to Lt. Col. Joseph Schafer, the Army's project manager for the KICC program, the CMN extends the global information grid to the coalition's remote sites in Iraq. "Our vision is to strike a balance between the need to deliberately build out the GIG at the major base camps and to quickly extend the GIG to more temporary locations," he explains.

The network gives coalition users at remote sites access to the same quality of communications as at larger, more established locations; as an example, CMN gives the sites data and FAX capability where they didn't exist before. The CMN reduces satellite usage by dynamically expanding and contracting bandwidth based on the user's instantaneous needs, using bandwidth-on-demand tech-



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nologies, which could reduce satellite leasing requirements by up to 60 percent.

For voice communications, the CMN employs a full-mesh topology. Each node in the network can talk directly with every other node going through the satellite, but without having to go through the hub. Using only a single satellite hop reduces satellite delay by 50 percent, meaning significant improvements in voice quality and secure call reliability for coalition users.

Ron Mikeworth, a project coordinator for the CMN effort, says that installation team members (including technicians from the prime CMN contractor, Lockheed Martin, and subcontractors DataPath and ViaSat) faced dangers as they traveled by truck in convoys through hostile territory to complete installations at remote sites. "Without the assistance of the soldiers who helped us transport the equipment to sites, our work in Iraq would have been extremely more difficult," he says. Mikeworth thanks the 711th Signal Battalion, Alabama National Guard, specifically Lt. Matt Kelly; the 111th Signal Battalion, South Carolina National Guard, specifically Lt. Monica McGrath and Sgt. Robin Goode; and the 3rd Signal Brigade, specifically Capt. Clair Crowe-Chaze.

"Combat operations continue, insurgency has driven up costs, and troop strength has increased rather than decreased," notes Schafer. "But despite it all, we're leveraging IP-based technology to field communications that meet the requirements of the transformational communications architecture, and we're doing it in a war zone. The CMN represents a tremendous capability for GIG extension in the area of responsibility."

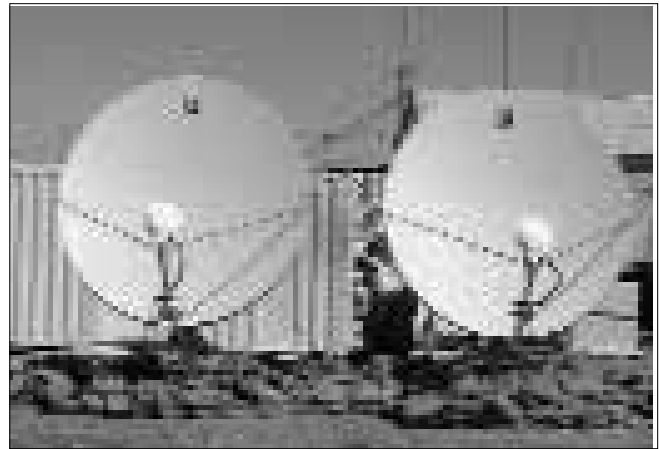
For more information, contact the Public Affairs Officer for PM DCATS at stephen.larsen@us.army.mil.

ARMY NEWS SERVICE (DEC. 14, 2004) **STRYKER PERFORMANCE SCORES HIGH WITH ARMY LEADERS**

Sgt. 1st Class Tammy M. Jarrett

WASHINGTON—Speed, protection, and mobility are just a few reasons Army leaders are praising the Stryker's survivability in urban combat and arctic environments.

"The Stryker is the system that is providing our soldiers with battlefield speed, situational awareness, and protection that is unmatched by any other Army system that we have," Brig. Gen. Jeffrey Sorenson, director of Management and Horizontal Technology Integration,



Shown here are two satellite terminals that make up one of the 20 remote nodes of the Coalition Military Network in Iraq. Between the two terminals, a contractor technician enters a container that served as a combination shipping trailer, communications and operational trailer, and temporary sleeping quarters for the contractors until housing became available.

Photograph by Pete Cryan

said during a Stryker media roundtable at the Pentagon Dec. 9, 2004.

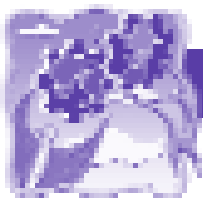
Sorenson and other Department of the Army leaders held a video tele-conference with Stryker Brigade Combat Team (SBCT) commanders from 3rd Brigade, 2nd Infantry Division, Fort Lewis, Wash., and 172nd Infantry Brigade, Fort Wainwright, Alaska, discussing the system's operational successes and lessons learned from the field.

"It's fast and quiet and tracks very well in the snow," said 172nd Commander Col. Michael Shields, via VTC from the brigade's tactical operations center. "The soldiers have complete confidence in the weapon system. It's incredibly accurate and lethal, and it works well in the arctic environment."

The 172nd was in day seven of a warfighting exercise, using lessons learned from 3rd Bde., 2nd ID, which returned from Iraq in October 2004, to shape its training as it undergoes transformation as the Army's third SBCT.

Stryker Proves its Worth

"The soldiers have complete confidence in the survivability based on the dialogue with their counterparts in Iraq," Shields said. He said they are also impressed with the overall digital equipment capabilities.



A static display of the Stryker was on hand for viewing by members of the media and Pentagon personnel after the Stryker media roundtable Dec. 9.

U.S. Army photograph



Lt. Col. Gordie Flowers, commander of 2nd Battalion, 3rd Infantry Regiment, said the Stryker vehicles have proved their worth in protecting soldiers from rocket-propelled grenades and car bombs. He said while in Iraq, more than 50 percent of his Strykers were hit with rocket-propelled grenades and improvised explosive devices.

“No soldiers in my battalion have been killed from either attacks in the Stryker vehicle,” Flowers said. “It has provided unprecedented protection of our infantry as we moved on the battlefield. It’s the perfect vehicle in an urban environment.”

Lt. Col. William “Buck” James, commander of 3rd Brigade, 1st Battalion, 23rd Infantry Regiment, said the Stryker system has unmatched mobility both mechanically and tactically.

“It gives you armor protection to deliver that infantry squad to the point of attack, [and] rapidly issue orders to be able to maneuver and gain the advantage over the enemy,” James said.

Lessons Learned Improve Stryker Capability

Although the soldiers like the Stryker and are confident in it, officials said it isn’t the perfect weapon.

Army procurement officials have taken lessons learned from Iraq and are making changes to be implemented in the near future to provide the most combat-effective equipment to support soldiers on the battlefield.

Col. Don Sando, Training and Doctrine Command system manager, said some of the mid-term improvements

include changes to the remote weapon station, day and night optics, laser rangefinder on the infantry carrier vehicle, and some of the other variants. Platforms will be stabilized so that new and improved weapons can be introduced.

They are also looking at initiatives to reduce the overall weight of the vehicle with the add-on slat armor to prevent it from getting stuck in the soft terrain in Iraq.

Other changes have already been applied to the vehicles—for example, the anti-tank guided missile carrier.

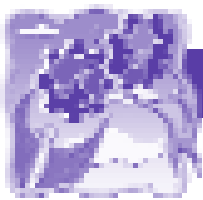
Col. Peter Fuller, Stryker project manager, said the carrier’s hatch only opened to a 45-degree angle. This didn’t allow the soldiers room to add weapons to the system or to stand behind the weapons.

“We immediately modified the hatch to open all the way back to allow the soldiers to put crew-served weapons on the back of the weapon and have people standing in the back, providing security,” Fuller said.

Fuller said they have also added a swing mounted on the vehicle so soldiers can hang their crew-served weapons in the back and are experimenting with a shield to go on the hatch to give soldiers more protection.

Lt. Col. Steven Townsend, 3rd Bde., 2 ID commander, said he is convinced that the Stryker is ahead of its game and is exceeding the Army’s expectation.

“The soldiers know this vehicle is not perfect, but they do know and believe it’s the best vehicle available and



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they have it to use today,” Townsend said. “Our soldiers have the confidence in the Stryker that it will provide, and get there fast and quiet.”

DEFENSE TRANSFORMATION (DEC. 15, 2004)

ARMY TEST COMMAND ENSURES EQUIPMENT MEETS STANDARDS

Staff Sgt. Brent A. Hunt, USA

FORT HOOD, Texas—Before U.S. soldiers around the world take a new piece of gear to the field, either wearing it, driving it, or firing it, the Operational Test Command at Fort Hood tests it to make sure it meets Army standards and can be used in the field functionally by the everyday soldier.

“We test everything from clothes to chemical, biological [equipment] to masks,” said Lt. Col. Greg Netardus, test management division chief. “Almost everything that comes into the Army is tested by the [command].”

Operational Test Command's task is to conduct realistic operational testing in the areas of equipment, doctrine, force design, and training. The tests conducted are required by public law and provide significant data to Army decision makers on key systems and concepts around the world.

Located on west Fort Hood are the Test and Evaluation Support Activity and five of Operational Test Command's test directorates: the Aviation Test Directorate; the Command, Control, Communications and Computers Test Directorate; the Close Combat Test Directorate; the Engineer and Combat Support Test Directorate; and the Future Force Test Directorate.

“The Operational Test Command was established 34 years ago at Fort Hood, and I am proud to have been a part of it for the whole ride,” said Arthur Woods, the longest employed tester at Fort Hood's Operational Test Command and currently director of resource management. “The mission has remained the same—to make sure that equipment issued to soldiers has been tested under operational conditions by functional experts. It is a team of noncommissioned officers, warrant officers, officers and civilians backed up by support contractors,” Woods added. “We use noncommissioned officers as test officers, because they bring experience with them. [They] have been the back bone of testing, because they put their hands on the equipment daily.” Recently, the command conducted a study on a piece of equipment

“The Operational Test Command was established 34 years ago at Fort Hood, and I am proud to have been a part of it for the whole ride. The mission has remained the same—to make sure that equipment issued to soldiers has been tested under operational conditions by functional experts.”

***—Arthur Woods
Army Tester***

in every conceivable situation around all parts of the world.

“We just finished extensive tests on a Joint Services mask,” said Phillip Riley, military test plans analyst. “We had all the Services test them in every type of environment around the world while they were doing their job. Afterwards, we collected data and made our recommendations on how to improve it.”

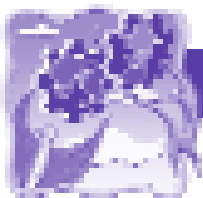
Not only does the command test masks and clothes, they are the main testers for the Stryker Brigades and the Apache Longbow helicopters.

“When we did the Stryker test, we brought outside units [field artillery, air defense, etc.] to [Fort Knox, Ky.] and they tried it out in a field environment,” Riley said. “We tested [Stryker Brigade] for three months at Fort Knox because that was the best place to do it with units that actually use that specific equipment.”

With a \$100 million annual budget, the biggest test Operational Test Command is currently conducting is the Army Battle Command System.

Before 4th Infantry Division went into Iraq for Operation Iraqi Freedom, the 4th Inf. Div., or now known by many as the Army's high-tech division, was the test bed for digitations on the digital battlefield.

“Digitations on the digital battlefield give the commander information on where friendly and enemy forces are in real time,” Netardus said. “In fact, some guys weren't real comfortable with it when it first came out until they realized it really worked.”



4th Infantry Division is still the main unit being tested with this new system, and they will use it when they re-deploy back to the front.

"Not only do we ensure equipment is compatible when units and soldiers first start to use it, we look at the whole system and if it breaks, determine what can be done to fix it and if it can be fixed," Netardus said. "We no longer wait for equipment to be tested. We send out rapid testing teams to see how equipment is doing," he added. "We have people here that will do whatever it takes to get the job done."

From operational testing of shovels to the Stryker Brigade on to the Apache Longbow helicopter, the underlying philosophy that guides the Operational Test Command is its motto, "Truth in Testing."

Hunt is on the staff of the Fort Hood Sentinel, published at Fort Hood, Texas.

DEPARTMENT OF DEFENSE NEWS RELEASE (DEC. 15, 2004)

NAVY AWARDS CONTRACT OPTION FOR FIRST LITTORAL COMBAT SHIP

The Department of Navy today awarded Lockheed Martin Corp., Maritime Systems & Sensors, Moorestown, N.J., a \$188.2 million contract option for detail design and construction of the first Flight 0 Littoral Combat Ship (LCS).

LCS is an innovative combatant designed to counter challenging shallow-water threats in coastal regions, specifically mines, diesel submarines, and fast surface craft. A fast, agile, and networked surface combatant, LCS will use focused-mission packages that deploy manned and unmanned vehicles to execute a variety of missions.

"Today we take the next step toward delivering this needed capability to the fleet," said Assistant Secretary of the Navy for Research, Development and Acquisition John J. Young Jr. "Just two years after we awarded the first contracts, we're signing a contract to build the first LCS. This was made possible by great support from Congress and industry, which both teamed with the Navy so we can provide the fleet with greater capability and flexibility to meet mission requirements."

This detail design and construction contract option award is a critical step in getting the first LCS in the water in 2006. Lockheed Martin's teammates include Gibbs & Cox, Arlington, Va.; Marinette Marine, Marinette, Wis.;

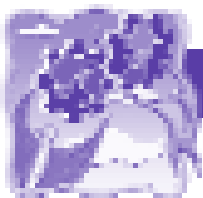
and Bollinger Shipyards, Lockport, La. Marinette Marine will begin construction early next year after a production readiness review with the Navy.

"LCS takes the operational Navy into a higher tactical speed regime and is a net-centric focal point," said Rear Adm. Charlie Hamilton, program executive officer for ships.

"It will also fundamentally alter the ship/mission system integration paradigm through extensive use of modularity. The acquisition of LCS sets a new standard for rapid procurement in support of the warfighter." Echoing Hamilton's comments, Young noted that "the LCS program has demonstrated fundamental, positive changes to reform and accelerates the acquisition process."



Artist's concept of the first Flight 0 Littoral Combat Ship. The LCS is an entirely new breed of U.S. Navy warship that will provide combatant commanders the required warfighting capabilities and operational flexibility to ensure maritime dominance and access for the joint force. Rendering provided by the U.S. Navy courtesy General Dynamics



On May 27, 2004, the Department of Defense awarded both Lockheed Martin and General Dynamics—Bath Iron Works, Bath, Maine, separate contract options for final system design with options for detail design and construction of up to two Flight 0 LCS.

The Navy plans to build a total of four Flight 0 LCS.

Visit <<http://peoships.crane.navy.mil/lcs/>> for more information on the LCS.

ARMY NEWS SERVICE (DEC. 30, 2004) ARMOR PROCUREMENT ON SCHEDULE

Eric Cramer

WASHINGTON—The Army will meet its requirement of 8,105 up-armored Humvees by March 2005, has equipped all deployed soldiers and DoD civilians with Interceptor Body Armor, and has also developed a more flexible system for meeting field commanders' equipment needs.

In a roundtable discussion with members of the media Dec. 30, Brig. Gen. Jeffrey Sorenson, deputy for acquisition and systems management, and other members of the Army staff discussed the procurement of material and armor for both vehicles and people in theater.

Sorenson said the issue of providing armor for vehicles has evolved as the conflict in Iraq has changed mission requirements.

"On the march to Baghdad, we had mostly armored-type vehicles, tanks, Bradleys, or whatever" Sorenson said. "After that, the Army wanted to be less obtrusive and made a conscious decision to lower that to one-third of the force and go to motorized vehicles."

He said the threat that developed from improvised explosive devices, known as IEDs, drove the need for additional up-armored vehicles.

More than 6,000 factory-produced up-armored Humvees are already in the CENTCOM area of operations, Sorenson said. Of the other Humvees there, roughly 80 percent—or about 10,500—have now been equipped with armor, either at the factory or in the field.

"It's not just armoring of vehicles," Sorenson said. "We've added body armor for our personnel, methods to prevent improvised explosive devices from working. It's been a holistic effort."

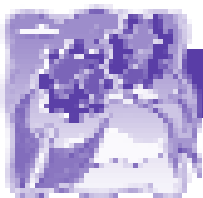
He said the Army has also improved force protection by creating an IED Task Force that analyzes every incident to help determine new ways to counter the threat of insurgency.

Col. Ed Donnelly, chief of the Dominant Maneuver Division, G8, said protecting soldiers in the field is also the mission of the Army's Interceptor Body Armor.

"The IBA consists of an outer tactical vest or OTV and small arms protective inserts or SAPI," Donnelly said. "It's been augmented this year with the Deltoid Axillary Protector, which is an ambidextrous add-on to protect the shoulder and arm."



Army Col. Ed Donnelly, chief of the Dominant Maneuver Division, G8, points out the Deltoid Axillary Protector on the Interceptor Body Armor worn by Maj. David Delmonte, systems synchronization officer for soldier equipment. Photograph by Patricia Ryan



He said the Army is currently producing 25,000 sets of IBA per month, and will continue to do so until it reaches the goal of having more than 800,000 sets sometime in the second quarter of fiscal year 2006. Currently, the Army can equip all of its personnel in Iraq, Afghanistan, Kuwait, and the Horn of Africa with the protective gear. Soon it will be part of every soldier's field equipment, in both forward and training environments, he said.

Dr. Forrest Crain, director of Capabilities Integration, Privatization and Analysis, G-3, said the Army has improved its methods for acquiring new equipment to meet the need of commanders in the field.

"Commanders can create an operational needs statement," Crain said.

He said the ONS system allows commanders to evaluate a need, create a statement that goes through the chain of command, and allows the Department of the Army to meet the requirement if it cannot be met at lower levels.

"Before Sept. 11, we received less than 12 of these a year. Since October, 2002, we received 2,600. In 2004, we received 1,400 ONS statements," Crain said.

He said meeting an ONS request is much more rapid than is traditional in Army acquisitions.

"If you think about the normal process, where the military is buying something like the F-22 fighter or the M-1 Abrams tank for the first time, that's a multi-year process," Crain said. "In the ONS system, if a commander needs, say, sniper rifles, he puts together an ONS. It isn't a complicated or bureaucratic process, but it runs through the chain of command because commanders may not be aware of all the resources available."

He said the ONS requests are handled by officers who have specific areas of expertise.

"Requirements staff officers look to see if it's just a matter of redistributing something. They look at new ways to meet the requirement. For example, we've had an increased need for .50-caliber machineguns," Crain said. He said the Army was able to meet the need for the weapons from stores without seeking to purchase more.

Crain said a council of colonels meets to validate and prioritize the ONS and how they are met.

"When it comes to reaching the priorities, it's a commonsense approach," Crain said. "The first needs that are met are those that are in theater, in combat. Next are units that are getting ready to deploy."

Crain said a unit's component isn't a factor.

"It doesn't matter if it is a reserve or active component; what matters is whether it is in combat or next to deploy," he said.

MARINE CORPS NEWS (JAN. 5, 2005) RIVERINE CRAFT PROVES ITSELF IN IRAQ

Cpl. Shawn Rhodes, USMC

MARINE CORPS BASE CAMP LEJEUNE, N.C.—In April 2004, the assault on Fallujah raged inside the city. There were reports of insurgent movement to and from the city via the Euphrates River, creating a liquid highway for trafficking people and weapons. It was up to 2d Marine Division's Small Craft Company to stop it.

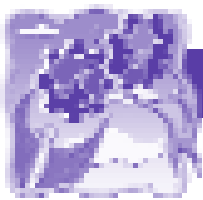
To do so they relied on the latest fusion of speedboat and warfighting craft—the Small Unit Riverine Craft (SURC).

"The boat has proved itself to be perfectly suited for the environment in Iraq. It's held up well right off the shelf," said Color Sgt. Matthew R. Tomlinson, a landing craftsman first class with the British Royal Marines. The Somerset, United Kingdom, native has participated in landing operations from Northern Ireland to Sierra Leone and recently worked with the company and the SURC in Iraq.

"I look at it this way: Every country has rivers and waterways. A lot of countries have more waterways than roads, so it is important we have a strong riverine force," Tomlinson said.

The force Small Craft Company brought to Iraq included a few of the new 39-foot SURC capable of carrying three weapons systems per craft, making them the most dangerous thing in the water.

Not only do we have the most firepower on these boats compared with the Rigid Raider Craft, but the speed and maneuverability blows other tactical boats out of the water, according to Sgt. Aaron A. Smith, a platoon sergeant with the company who has been able to work with the SURC. Although the Riverine Assault Craft carried four weapons systems on board, the speed and ma-



FALLUJAH, IRAQ—The Marines of Small Craft Company rest for a moment during a patrol near Fallujah. Their new Small Unit Riverine Craft proved invaluable during countless ambushes, raids, coordinated strikes, and medical evacuations during Operation Iraqi Freedom II.

Photograph courtesy Small Craft Company

neuverability of the SURC makes it a better fighting platform. The Kerrville, Texas, Marine explained how the new boat can out-perform any other craft on the water.

“This boat can go from zero to 25 knots in 15 seconds. A top speed of 40 knots means Marines can move in and out of kill zones faster,” Smith said. He added, “Because of the twin 440 horsepower six-cylinder diesel engines, it can move and turn faster than our other boats. Additionally, it is the only boat with ballistic protection even around the engine compartment.”

Smith said they would be field testing mini-guns and possibly missiles on the craft in the future.

Not only are the SURC faster, they can travel farther than their predecessors as well.

“The old Raider craft could travel 75 nautical miles whereas the SURC can travel for 250 nautical miles,” said Staff Sgt James A. Cascio, a platoon sergeant with the company and native of Long Island, N.Y. He added, “This boat is great both on (seaside and riverine) operations. Because of the way it is designed, it performs well both on the ocean and on rivers.”

“If we didn't have this [riverine assault] asset on the water, the insurgents would be moving around in boats on the water,” Tomlinson said. He explained about one situation where the boats proved themselves in combat.

“It was the first day of our assault on Fallujah and we were ambushed,” Tomlinson recounted. “We went full

speed to the shore and started laying down fire with our guns. The word got out not to mess with these boats, and there weren't any boats around us on the water after that.”

Tomlinson added the reason the company always beat the enemy not only because of the boats, but also the extreme professionalism of the crew and gunners on board.

The SURC boats proved themselves time and time again in the waterways of Iraq, and despite being new, come with great reviews from the men who live on them.

“The boats are like homes for seven months. The Marines are so proud you feel you need to wipe your feet before stepping on board,” Tomlinson said. He added, “The boats have never

failed a mission or task they've been put up to and we've never had to quit, saying 'something happened to one of our boats.'”

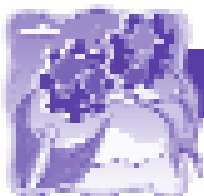
DEPARTMENT OF DEFENSE NEWS RELEASE (JAN. 7, 2005) **FISCAL 2005 ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS ANNOUNCED**

The acting under secretary of defense for acquisition, technology and logistics Michael Wynne announced the selection of new Advanced Concept Technology Demonstration (ACTD) projects for fiscal 2005.

The military services, combatant commanders, defense agencies, and industry submitted almost 100 proposals. Representatives of the military services and major combatant commanders reviewed the list of proposals and provided their requirements for operational capabilities.

The ACTDs selected for initiation in fiscal 2005 in alphabetical order are:

- **Actionable Situational Awareness Pull:** “Pull and tailor” relevant actionable information
- **Chemical Unmanned Ground Reconnaissance:** Detection at maneuver speeds, while protecting personnel
- **Coalition Secure Management and Information System:** Rapid role-based secure release of command and control information among coalition partners
- **Epidemic Outbreak Surveillance:** Near real-time, presymptomatic diagnostic detection of pathogens



In the News

- **Joint Coordinated Real Time Engagement:** Joint real-time operations across multi-Combatant Commands, theaters, and echelons
- **Joint Enhanced Explosion Resistant Coating Exploitation:** Protection against explosives and/or penetrating ordnance
- **Joint Force Projection:** Comprehensive, end-to-end planning of joint deployment
- **Medical Situational Awareness in Theater:** Fusion of medical data and health threat intelligence
- **Rapid Airborne Reporting & Exploitation:** Target detection, identification, and characterization
- **Sea Talon:** Undersea detection in littoral areas
- **Sea Eagle:** Monitoring of maritime areas
- **SOCOM Long Endurance Demonstrator:** Unmanned vehicle for vertical take off and landing with long
- **Viper Strike:** Precise targeting with minimal collateral damage
- **TACSAT-2 Roadrunner:** Responsive and affordable tactical satellites
- **Weapons Data Link:** Weapon re-targeting in flight.

The ACTD program aids in rapidly transitioning advanced technology into the hands of warfighters serving the unified commanders.

Marrying new operational concepts with maturing technologies in a joint environment, ACTDs reduce the time required to field new systems and increase user involvement in system design and integration.

For more information on the ACTD program, go to <http://www.acq.osd.mil/actd/> >.

THIRD MARINE AIRCRAFT WING (JAN. 7, 2005) THUMB DRIVES SAVE TIME, MEMORIES

Cpl. Joel A. Chaverri, USMC

AL ASAD, Iraq—With the digital age upon us, information is slowly moving away from paper and toward the computer screen. Miniature hard drives, referred to as “thumb drives,” have become the new rage among business professionals and personal users alike.

Suitably named, the drives are about the size of a person's thumb, able to store large amounts of information in an incredibly small amount of space. This capability has allowed the average person to store various types of data that otherwise would be a hassle to maintain.

Service members deployed in support of Operation Iraqi Freedom are no exception. Troops are able to use this technology to save family pictures, journal entries, work files and more, all of which is able to fit in the palm of their hand.

“With the drive, I no longer have to keep paper copies of everything,” said Hospital Corpsman 2nd class Joseph L. Entrekin, aviation physiology technician, Marine Aircraft Group 16, 3rd Marine Aircraft Wing. “I can keep my work and important data with me at all times.”

Transporting information from one workstation to the other is also a useful feature used prominently with the thumb drives.

“I use it to store lectures I give to different units on base,” said Entrekin, a 30-year-old native of Washington Court House, Ohio. “Before I got it, I had to carry a laptop to my meetings, or burn a compact disk. Now all I need is this little drive.”

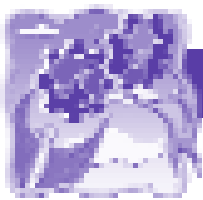
Thumb drives use a technology called the Universal Serial Bus (USB). They can plug into nearly any computer or device that has a USB port, giving users the ability to copy and save files at a quick rate.

“It's saved me a lot of time,” said Entrekin. “It's been a lifesaver and made my job a lot easier.”



Miniature hard drives, sometimes referred to as “thumb drives,” are becoming a common piece of gear among military professionals, including Marines in Iraq. Suitably named, the drives are about the size of a person's thumb, able to store large amounts of information in an incredibly small amount of space.

Photograph by Cpl. Paul W. Leicht, USMC



In the News

Thumb drives are available in different memory sizes, many able to hold more information than a CD.

"[CDs] scratch easily and can only be used once," said Entrekin. "These drives can be used over and over and you never have to worry about them getting scratched."

With all of their capabilities, thumb drives are swiftly creating a medium for troops to save memories of their experiences.

"I save all my pictures on my drive," said 24 year-old Falls City, Neb., native Pfc. Joey W. Schuetz, airframe mechanic, Marine Aircraft Group 16, 3rd Marine Aircraft Wing. "I'll check my e-mail from the Internet café and copy the pictures over so that I can look at them whenever I want to."

Seeing pictures of family and friends can help build morale among troops who have been deployed for long periods of time.

"Being able to save pictures on my drive has really paid off," said Schuetz. "It's absolutely worth its weight in gold."

ARMY NEWS SERVICE (JAN. 11, 2005) ARMY ADOPTS NASCAR TECHNOLOGY FOR HELICOPTERS

Stefanie A. Gardin

WASHINGTON—NASCAR windshield tear-offs will soon provide Army helicopters an extra layer of protection from sand, rocks, and debris thanks to two National Guard soldiers.

Sgt. 1st Class Paul Kagi and Sgt. Michael Mullen, Virginia Army Guard helicopter mechanics, submitted the idea to use windshield tear-offs to the Army Suggestion Program after discussing the idea at a Christmas party five years ago.

Their unit went to the National Training Center, Fort Irwin, Calif., with brand new helicopters. However, when they came back, they had to replace about 80 percent of the windshields as a result of sand damage.

"Sand will eat up a glass window. It gets so pitted you can't even see out of it," said Kagi. "That's where Sgt. Mullen got the idea. He said, 'Hey, they put tear-offs on race cars at Daytona and Texas for that very reason—to protect them from sand and debris.'"



The windshield tearoff is being applied to a Blackhawk helicopter by Steve Fricker of United Protective Technologies at Fort Eustis, Va. Photograph by Andrew Hough

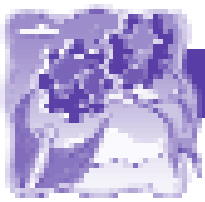
Kagi did some homework, researching tangible cost savings for the tear-offs, and the idea was submitted through the Army Suggestion Program channels for evaluation. Eventually, the aviation team at the Aviation and Missile Research Development and Engineering Center, Redstone Arsenal, Ala., together with the Defense Logistics Agency, picked up the idea and funded all the testing.

"In order to put anything on a helicopter, we have to do a lot of testing on it because if a helicopter doesn't work, it crashes—and that's bad news," said Doug Felker, Reliability, Availability and Maintainability team leader at AMRDEC.

Felker and team put the windshield tear-offs through a series of environmental testing and visibility testing with the naked eye and night vision goggles. They also flight-tested the tear-offs on an aircraft in California in a brownout condition, where the aircraft purposely flies into a dust and sand environment, said Ken Bowie, RAM team member.

"The material has met or exceeded our expectations on all the tests at this point," said Bowie. "That is how we got our airworthiness release."

An Army airworthiness release is similar to its civilian counterpart—FAA approval. Any aircraft modifications must have this release before going into effect. So far, the RAM team has received approval for a single-layer tear-off sheet for the Black Hawk only, but it is working to get approval for the other aviation platforms: the Kiowa, Apache, and Chinook as well.



"Tear-offs are simple solutions to a tactical problem," said Bowie. "The problem is operating in a sandy, dusty environment."

The tear-offs are clear pieces of Mylar, seven millimeters thick, that are molded to the shape of the windshield. Mylar has all of the optical qualities of regular glass and even stands up to abrasions better than glass because it has more give to it.

The point of the tear-off is that if there are incidences where a windshield gets pitted or dinged up, the damage is on the Mylar, not the windshield. Instead of replacing the windshield, which is time-consuming and costly, the Mylar can be torn off, and the aircraft can move on.

"We want the Mylar to fail," said Felker. "As long as the Mylar receives all of the damage, the windshield's life is prolonged. Right now there is an acute shortage of windshields, and those windshields aren't cheap."

Current predictions estimate the life of one tear-off to be about six months. As long as the tear-off is not hit by something it won't handle—like bullets—and a fresh piece of Mylar is kept on it, the windshield should last forever, said Bowie.

"Tear-offs will save the Army repair, increase readiness, and save a great deal of money in both material and maintenance costs," said Felker.

Other contributors to the funding, research, and fielding of the tear-offs have been the Defense Logistics Agency, Richmond, Va.; the Black Hawk Project Office, Huntsville, Ala.; and the Aviation Applied Technology Directorate, Fort Eustis, Va. Installation of the tear-offs on Black Hawks in Iraq and Kuwait is slated to start the first or second week in February.

"The goal is to improve things for our peers," said Kagi. "With helicopters, we operate and fight battles all over the world, and if we can get the word out or suggest something that is for the good of Army Aviation, then that is what we want to do."

Cash awards are paid for ideas adopted that were submitted through the Army Suggestion Program. The amount is based on tangible cost savings with a maximum award of \$25,000.

AMERICAN FORCES PRESS SERVICE (JAN. 11, 2005) **SCANEAGLE PROVES WORTH IN FALLUJAH FIGHT**

Jim Garamone

FALLUJAH—It's called ScanEagle, and it has already saved the lives of many Marines.

ScanEagle is an unmanned aerial vehicle that the Marines used during Operation Al Fajr, the coalition operation to remove insurgents from this city.

The ScanEagle system, developed by Boeing and the Insitu Group of Bingen, Wash., had its baptism by fire during some of the heaviest urban combat Marines have been involved in since Hue City in Vietnam in 1968. The UAV performed flawlessly, 1st Marine Expeditionary Force officials said today.

ScanEagle is a relatively low-cost UAV at \$100,000 a copy. But its real worth was in giving Marines in Fallujah a real-time picture of the enemy and helping them close with and kill insurgents without becoming casualties.

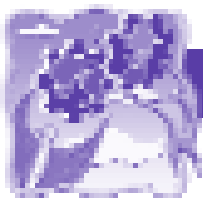
Driven by a small propeller, the aircraft can stay airborne for 19 hours on just a gallon and a half of gas. It is a "launch-and-forget" system. A catapult launches the 40-pound aircraft, and a computer operator just clicks the cursor over the area of interest. The aircraft operates autonomously.

The cameras—either for day or night—have enough definition to identify individuals and show if they are carrying weapons. "This was a true advantage for us during the operation," said Marine Col. John Coleman, chief of staff for the 1st Marine Expeditionary Force. The rules of engagement were such that Marines could not engage unless they were sure the proposed target was carrying a weapon or intent on harming coalition forces.

ScanEagle enabled commanders to ascertain targets and provided specific coordinates via the Global Positioning System.

The system can also track moving targets. ScanEagle gives commanders at several different levels real-time video. With the explosive growth in use of the Web in warfare, commanders many miles away can direct the system.

All of this is not bad for a system designed to find fish. Insitu developed the aircraft to be launched and recov-



A Boeing contractor explains the workings of the ScanEagle unmanned aerial vehicle to visiting military analysts. The UAV has been credited with saving the lives of a number of Marines during the fighting in Fallujah in 2004.

Photograph by Jim Garamone

ered by tuna boats. Fishermen would use the UAV to spot schools of tuna.

When the Marines needed another UAV system, they contracted with Boeing in June 2004 for ScanEagle and the contractors to run it. Four Boeing employees answered the call, and ScanEagles were soon flying missions over the most dangerous city in Iraq.

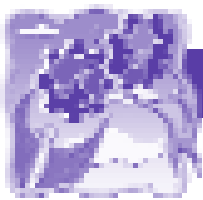
The UAV is small and tough to see, said Marine officials. The contractors put the mufflers pointing up so that the enemy couldn't track the aircraft by sound. The Marines operate the aircraft at a very low altitude and lost only one to enemy fire during the weeks of intelligence gathering leading up to Operation Al Fajr.

The Marines already use the Pioneer UAV and have access to other UAV information. The ScanEagle has a small

footprint. Manning for the system is small, and all the system needs to operate can be carried in four Humvees. The Pioneer, one of the oldest UAVs in the inventory, needs a runway to operate from, several C-130s to transport the system, and 120 people to operate it.

Marine officials are impressed with the ScanEagle system, and have shown the system's capabilities to Army, Navy, and Air Force officials.

Marine officials do not know the true extent of the system's use. "You never really know until the Marines push the capabilities," Coleman said. "Our young Marines are the experts. They know what they need, and they have the knowledge to try new methods and stretch the capabilities of most pieces of equipment."



AMERICAN FORCES PRESS SERVICE
(JAN. 11, 2005)

NEW WEAPONS CARRIER TO OFFER HIGHLY DEPLOYABLE FIRING PLATFORM

Donna Miles

WASHINGTON—A new weapons carrier that has already proved itself under fire in Iraq will give ground troops a more mobile platform for firing rockets and missiles when it's fielded to operational units beginning this spring.

The addition to the Army's and Marine Corps' inventories reflects a growing trend in the military's transformation: lighter, more easily deployable equipment better geared to the joint expeditionary forces that use it.

The new High Mobility Artillery Rocket System, known by the acronym HIMARS, can roll onto an Air Force C-130 transport aircraft. Army Lt. Col. Darryl Colvin, product manager for field artillery launchers at Redstone Arsenal, Ala., said this capability will give joint expeditionary forces "a very lethal, very deployable system" that's also highly maneuverable on the battlefield.

The heavier, tracked system the HIMARS will replace, the 1981-vintage M-270 launch vehicle, was generally

transported by ship and "took time to get to the fight," Colvin said. The only transport aircraft able to carry that launcher were Air Force C-141s and C-5s, neither of which shares the C-130's ability to land on short, unimproved runways.

During tests on the new lightweight, wheeled HIMARS, troops demonstrated a capability unimaginable with the older launch vehicle. They flew to Fort Sill, Okla., landed on a dirt runway, and then, within 15 minutes, offloaded, set up, and prepared to receive a fire mission.

Enabling troops to quickly set up, execute a fire mission, and then move away from their launch site reduces the risk of a counterattack, Colvin said.

In addition to its deployability, the new system also offers its three-person crews the ability to fire global positioning system-aided munitions, minimizing collateral damage. Colvin said HIMARS will also carry multiple-launch rockets and the Army Tactical Missile System and fire at ranges between eight and 300 kilometers, depending on the munitions used.

The new system will give troops more capability to operate on a "very dynamic, fast-flowing battlefield," he said.

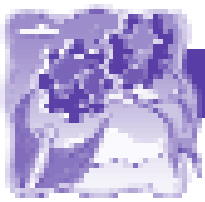
Three prototypes of the HIMARS were "very successful" and "never missed a mission" when put to the test in Iraq with the 18th Airborne Corps' 3rd Battalion, 27th Field Artillery, Colvin said. This is the same battalion slated to receive the first new launchers, beginning in March 2005.

Getting the opportunity to field-test the prototype in combat conditions revealed a great deal about the launchers and gave developers an opportunity to incorporate some late-stage changes, Colvin said. The launchers are now lighter and have an improved self-reloading capability better adapted to field conditions. So far, the Army has ordered 89 HIMARS launchers and the Marine Corps, six. If the system goes to full-scale production, as expected, the Army will ultimately buy 888 of the new systems and the Marine Corps, 40 within the next 15 years, Colvin said.



The High Mobility Artillery Rocket System fires the Army's new guided Multiple Launch Rocket System during testing at White Sands Missile Range, N.M.

U.S. Army photograph



In the News

ARMY NEWS SERVICE (JAN. 21, 2005) **PALADINS—HAVE GUNS, CAN TRAVEL**

Cpl. Benjamin Cossell, USA

CAMP TAJI, Iraq—At 32 tons with the ability to fire up to four rounds per minute, the M109A6 Paladin 155mm self-propelled Howitzer is the most technologically advanced cannon system in the U.S. Army's vast field artillery arsenal.

Reinforcing the 1st Battalion, 206th Field Artillery Regiment, soldiers of the 1st Cavalry Division's Battery B, 2nd Battalion, 82nd Field Artillery, maintain and operate the Paladins as a piece of the 39th Brigade Combat Team's artillery firing battery.

"This baby can be on the move, get a call to fire, and be ready to respond in a matter of minutes," explained Hampton, Va., native Sgt. Donald Quash, an artilleryman with 2-82nd FA. "We can carry up to 32 conventional rounds, two copper head [laser-guided] rounds and 44 propellants, in addition to the four crew members inside every vehicle."

While mobility is a key aspect of the Paladin, the battery has operated from a static gun-line as the 1st/206th used the Paladin's ability to fire over long distances. Last June, the battery reinforced the 1st of the 206th as more and more of the attacks on Camp Taji came from areas outside the range of the unit's M102 Towed Howitzers.

"With the ability to fire up to 30 kilometers, the Paladins allow us to respond to attacks outside the range of our guns," said Maj. Damon Cluck, operations officer for the 1st/206th.

Cluck said Paladins have become a vital piece in the counterfire missions against enemy mortars and rockets that are core to field artillery in Operation Iraqi Freedom.

"So far," he said, "the Paladins have been called to fire for 74 missions with a total of 504 rounds being shot."

Cluck explained said some of the shots fired were for registration, "zeroing the rifle" to make certain that the 155-millimeter weapon is on target when it delivers its brand of fury.

The eardrum-shattering report of the Paladin rings out as the battery runs through one such registration fire mission. Spc. Ellery Villalobos, the ammunition team chief, stands a distance away from the vehicle, a red propellant bag slung over his shoulder. He waits. The look

of excitement and sheer joy mix on his face with the dirt and grime that flies back with each round expelled. BOOOOOM fires the gun and Villalobos is sprinting towards it with a new round to load up.

"HOOOOOAH!", he shouts as he sprints back throwing another propellant charge over his shoulder in anticipation. "This is what being artillery is all about! COME ON GUYS! LET'S GO! GET THAT ROUND DOWN RANGE!"

All told, the team will fire 10 rounds, two for adjustment, eight for effect. The impacts are monitored and relayed back to the fire direction center by an observation team stationed at the range. As the mission comes to a close, 2nd Lt. Bryan Shipman, fire direction officer, Battery B, 1st-206th walks out to congratulate the soldiers for an impressive shoot.

"Only two rounds for adjustment and all eight of the rounds for effect were within ten meters of each other," the lieutenant tells them. "That's just awesome guys, great shooting."

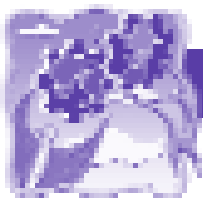
Working on Camp Taji has allowed the soldiers of the battery to maintain their proficiency with their primary weapon system. Many an artilleryman has assumed the role of the infantry—patrolling the streets of Baghdad, spending more time inside a Humvee and conducting raids than putting the skills of their chosen military occupational specialty to use.

"The battery does a really good job of rotating its soldiers up here," observed Cluck. "So guys are still out there on the streets patrolling and doing that mission, but then get a chance to come up here and maintain their core competency."

The Paladins have also proven beneficial to artillery soldiers of the 1st/206th. The paladins and M102 Howitzers share the same fire direction center—the computer nerve center of the gun-line.

"Many of soldiers had no previous experience operating the computer systems used by the Paladins," Cluck said. "As we work together to accomplish the mission, they've had to learn how to use them and can now add that to their knowledge base."

Having completed their registration fire, the team of soldiers conducts an informal after action review: what could have been better, what went badly, and what they can improve. Sgt. Richard Castro, of Fresno, Calif., notes



that the shoot was supposed to include 20 rounds but for reasons unspecified, called short at 10.

"That's OK," Castro exclaimed as he rinses the accumulated dirt from his face. "[That] just means we'll have to do it again sometime soon, and there isn't any job better in the Army than this one right here!"

Cossel writes for the 122nd Mobile Public Affairs Detachment.

DEPARTMENT OF DEFENSE NEWS RELEASE (JAN. 21, 2005) **NAVY FUNDS CONTRACT OPTION FOR CONSTRUCTION OF DESTROYER**

The Department of Defense announced today that Bath Iron Works, a unit of General Dynamics, received a \$562.1 million modification to its FY02-05 DDG 51 Class multi-year contract to build the final ship of the Arleigh Burke Class. As the 34th DDG 51 Class Destroyer built by Bath Iron Works, DDG 112 represents the culmination of new construction for the U.S. Navy's AEGIS shipbuilding program and marks the beginning of a major transition for the Navy as it moves from the DDG 51 to the next generation of destroyer, the DD(X).

John J. Young Jr., assistant secretary of the navy for research, development and acquisition, described today's action as another "landmark on the highway" of AEGIS shipbuilding.

"This is the last of 62 DDG 51 Class ships, the final act of a play that will be reviewed as one of the most successful defense acquisition programs in history," said Young. "Bath Iron Works continues to produce excellent AEGIS destroyers that will serve this nation's vital interests for decades to come. The funding of DDG 112 also continues the Navy's commitment to a multi-year procurement contract and, combined with the purchase of LPD 25, satisfies the DDG-LPD workload swap agreement, which saved the taxpayers over \$500 million in shipbuilding costs."

"This extremely capable class of combatants continues to serve our nation and our Navy with distinction, and DDG 112 will carry on that proud legacy for decades to come as these ships serve as the foundation of our combatant force," said Rear Adm. Charlie Hamilton, the program executive officer for ships. "The Navy has utilized a number of acquisition tools on the AEGIS shipbuilding program, including spiral development, flight upgrades, and technology insertion. Those innovative methods have produced a great product and will continue to have

a lasting impact on how we develop and acquire the best surface combatants in the world."

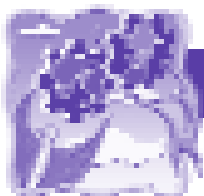
Like its other Arleigh-Burke Class ships, DDG 112 will be a 9,200-ton multi-mission guided missile destroyer capable of conducting a variety of operations, from peacetime presence and crisis management to sea control and power projection, in support of the National Military Strategy. DDG 112 will be capable of fighting air, surface, and subsurface battles simultaneously and will contain myriad offensive and defensive weapons designed to support maritime defense needs well into the 21st century.

The ship will be built in Bath, Maine, and the Navy expects delivery in December 2010. DDG



The Paladin 155-mm mobile howitzer fires during a drill. The weapon system is providing additional fire support to units overseas.

U.S. Army photograph



112 will benefit from the considerable technological advancements and engineering upgrades that have been developed, tested, and installed in the class since the commissioning of DDG 51 July 1991.

For more information about this release, contact the Navy news desk, (703) 697-5342.

DEPARTMENT OF DEFENSE PRESS ADVISORY (JAN. 27, 2005) DOD ANNOUNCES FISCAL 2004 REPORT

The Department of Defense announced today that the fiscal 2004 report of "100 Companies Receiving the Largest Dollar Volume of Prime Contract Awards (Top 100)" is now available on the World Wide Web. The Web site address for locating this publication and other DoD contract statistics is: <http://www.dior.whs.mil/peidhome/procstat/p01/fy2004/top100.htm>.

According to the new report, the top 10 Defense contractors for fiscal 2004 were:

	(In Billions)
1. Lockheed Martin Corp.....	\$20.7
2. The Boeing Co.....	17.1
3. Northrop Grumman Corp.	11.9
4. General Dynamics Corp.	9.6
5. Raytheon Co.....	8.5
6. Halliburton Co.	8.0
7. United Technologies Corp.	5.1
8. Science Applications International Corp.	2.5
9. Computer Sciences Corp.....	2.4
10. Humana, Inc.	2.4

In fiscal 2004, DoD prime contract awards totaled \$230.7 billion, \$21.7 billion more than in fiscal 2003.

AMERICAN FORCES PRESS SERVICE (JAN. 27, 2005) DOD TRANSFORMATION HERE TO STAY, CEBROWSKI SAYS

Gerry J. Gilmore

WASHINGTON—Transformation has taken hold across the Defense Department and "will be with us a very, very long time," DoD's top transformational thinker said here today.

In response to President Bush's directive to DoD to change itself to better confront 21st century threats, Defense Secretary Donald H. Rumsfeld has implemented many

policies that have changed the way the military operates and does business, noted retired Navy Vice Adm. Arthur K. Cebrowski, director of the DoD's Office of Force Transformation.

The admiral, speaking at an American Institute of Aeronautics and Astronautics-sponsored luncheon, pointed to revamps made to the Unified Command Plan as well other significant departmental changes that required legislation from Congress.

The department remains committed to improved and expanded communications capabilities, said Cebrowski, who's slated to retire from his current position at end of the month. "We're not going to step back to a less-networked age," he said.

The admiral said it's "difficult to undo some of the things that have been done." For instance, he said, the U.S. Army isn't going to jettison its new combat-brigade structure centered on the Stryker armored vehicle and go back to an old-style, division-based tactical force structure.

"That's just the way things are," he said.

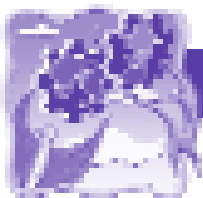
Also, he noted, the U.S. armed forces "are raising up a very large number of NCOs and junior and mid-grade officers who have combat experience" under the new transformational doctrine.

"That changes the force," he explained, noting today's servicemembers "have experienced many of these transformational things, whether they're items for procurement or they are tactics or they are organizational constructs."

The Army and Marine Corps, Cebrowski pointed out, employ "a very robust way of capturing these (transformational) attitudes, turning them back into the training for the forces that are going to deploy again."

Consequently, a culture of taking lessons derived from troop combat experiences in Afghanistan and Iraq has been developed across the Army and Marine Corps, the admiral noted.

"What happens is the doctrine process just catches up later," Cebrowski concluded.



PROGRAM EXECUTIVE OFFICE FOR ENTERPRISE INFORMATION SYSTEMS NEWS RELEASE (JAN. 27, 2005) **DEPLOYABLE PORT OPERATIONS CENTER PROVIDES TOTAL ASSET VISIBILITY FOR SDDC IN KUWAIT**

Stephen Larsen

ASH SHUAIBA, Kuwait—From December 2002 to the present, in support of Operation Enduring Freedom and Operation Iraqi Freedom, the U.S. Surface Deployment and Distribution Command (SDDC) has shipped more cargo for the American military than at any time in the past half-century.

During that period, the SDDC has moved more than 70,000 containers. That's enough materiel—from Bradleys to bullets to butter—to fill more than 1,000 football fields. Laid end-to-end, the containers would stretch from New York City past Fredericksburg, Va.

Most of the materiel has come into Southwest Asia through Ash Shuaiba, a port south of Kuwait City. Helping SDDC Southwest Asia keep track is the Deployable Port Operations Center (DPOC), a suite of IT systems contained in an 8-foot-by-20-foot shelter, with satellite connectivity provided by a 2.4 meter Flyaway Triband Satellite Terminal (FTSAT). The DPOC functions as a deployable office, providing SDDC personnel with the same nonsecure Internet protocol router network, secret Internet protocol router network, video teleconferencing, fax, and IT capabilities they have at their home stations.

The IT capabilities include the worldwide port system, through which the SDDC tracks all common-user surface shipments; the global transportation network, which is the DoD system of record for in-transit visibility; and the integrated computerized deployment system, which, based on information provided by WPS, provides automated stow plans for vessels. Together, these capabilities add up to in-transit visibility and total asset visibility throughout the logistics pipeline.

Contact Stephen Larsen: (732) 427-6756 or Stephen.Larsen@us.army.mil.

AMERICAN FORCES PRESS SERVICE (FEB. 7, 2005) **BUDGET EMPHASIZES PRESENT, FUTURE WARFIGHTING CAPABILITIES**

Donna Miles

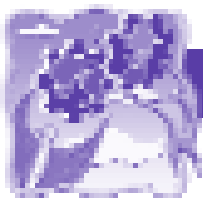
WASHINGTON—The president's \$419.3 billion defense budget request for fiscal 2006 reflects Secretary of Defense Donald H. Rumsfeld's four basic priorities: defeating global terrorism, restructuring the armed forces and global defense structure, developing and fielding advanced warfighting capabilities, and taking care of U.S. forces.

A senior defense official unveiled details of the proposed budget, which reflects a 4.8 percent increase over the 2005 budget and a 41 percent increase in DoD's budget since 2001.



A truck offloads cargo of the 3rd Infantry Division from a ship at the port of Ash Shuaiba, Kuwait.

Photograph by Stephen Larsen



In the News

The new budget continues to support the global war on terror and to provide those in uniform with the tools they need to fight this global war on terror, the official told Pentagon reporters.

"But it is also important that we are transforming the way we fight wars, and that includes new organizational strategies and realigning our forces and bases," the official said. "And in the area of building joint capabilities for future threats, we are applying the lessons from today's operations to strengthen our knowledge and joint capabilities for the future."

And although it was the last point listed on the briefing slide, the official said the effort to "take care of our forces" is actually the most important of all in the proposed budget. "People are our most important asset, and we continue to provide significant benefits and pay for our people," she said.

Funding to support the global war on terror is a key part of the budget proposal, and the official said the centerpiece of that is a \$48 billion commitment to restructure the Army's ground forces into brigade combat teams to create a more modular force. A military official told reporters this ongoing effort will increase the Army's combat capability by about 30 percent and is already showing a clear payoff in relieving the force during current operations in Iraq.

In support of this priority, the budget also:

- Accelerates the restructuring of the Marine Corps to add more combat and support units
- Provides \$2.1 billion in additional funding, for a total of \$9.9 billion, to increase the chemical and biological detection and protections for U.S. forces
- Funds homeland security activities, including Operation Noble Eagle, routine combat air patrols, and emergency preparedness and response activities
- Increases funding for special operations forces to \$4.1 billion to add 1,200 new special operations troops and four SEAL platoons, as well as other initiatives
- Provides additional funding to improve intelligence capabilities and intelligence-gathering systems, including the space-based radar and secure communications platforms
- Seeks legislative authorities that support the Commander's Emergency Response Program and other programs in direct support of the war on terrorism.

The proposed budget also reflects continuing efforts to restructure U.S. forces, global and stateside basing, and

DoD management and support activities. At the same time, it supports initiatives to better manage current demands on the force.

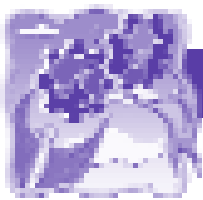
In support of this priority, the budget:

- Provides continued funding to restructure Army ground forces and to add combat and support units to the Marine Corps to increase its warfighting power and reduce stress on its high-demand forces
- Increases the Navy's combat power by supporting the Fleet Response Plan, replacing aging ships, and transitioning to a new generation of more capable ships
- Supports the continued restructuring of 10 air and space expeditionary forces that enable the Air Force to better support U.S. combatant commanders worldwide
- Helps manage demand on the force by rebalancing high- and low-demand capabilities within the active and reserve components and returning military personnel in civilian-like jobs to combat and core defense functions
- Restructures the U.S. global defense posture and streamlines DoD bases and facilities "to help us be where we need to be" for current and future operations, rather than Cold War-era ones, the official said.

The fiscal 2006 budget proposal reflects ongoing efforts to develop and field new military capabilities—with an emphasis on joint capabilities—to counter future threats, the official said. In support of this priority, the budget:

- Continues funding to develop, test, and field missile defense technologies to defeat ballistic missiles and adds five ground-based interceptors
- Supports Army modernization through the Future Combat Systems Program and the Army Aviation Modernization Plan
- Promotes Navy shipbuilding to continue the shift to a new generation of ships and funds four new ships
- Funds advanced aircraft to increase U.S. capabilities and replace aging systems; this includes funding for the F/A-22 Raptor, Navy F/A-18E/F Super Hornet, Joint Strike Fighter, C-17 transport aircraft, and tanker replacement
- Continues funding to develop and field intelligence and intelligence-gathering capabilities
- Promotes development and procurement of unmanned systems, including Joint Unmanned Combat Air Systems and Global Hawk and Predator unmanned aerial vehicles.

The budget also maintains President Bush's commitment to support U.S. military forces and their families,



In the News

whom the senior defense official called "our nation's most important defense asset." The proposed budget:

- Funds a 3.1 percent hike in military base pay and a 2.3 percent increase in civilian pay
- Increases funding for the Defense Health program
- Provides a 4 percent increase in the basic allowance for housing and eliminates more inadequate family housing units
- Expands healthcare coverage under TRICARE for National Guard and Reserve members before and after mobilization
- Provides up to 36 months of educational benefits for reserve component members who have been mobilized
- Increases maintenance funds for facilities used by DoD military and civilian employees.

DEPARTMENT OF DEFENSE NEWS RELEASE (FEB. 8, 2005) **DOD SELECTS FOREIGN DEFENSE EQUIPMENT FOR TESTING**

The Department of Defense has selected 18 new start projects to receive fiscal 2005 funding under the Foreign Comparative Testing (FCT) program.

Authorized by Congress since 1980, the FCT Program is administered by the deputy under secretary of defense, advanced systems and concepts, office of the under secretary of defense, acquisition, technology and logistics.

The FCT Program demonstrates the value of using non-developmental items to reduce development costs and accelerate the acquisition process. The principal objective of the program is to support the U.S. warfighter by leveraging non-developmental items of allied and other friendly nations to satisfy U.S. defense requirements more quickly and economically. This is to increase U.S. capabilities in the war on terrorism and improve interoperability with our allies.

Given a first-rate foreign non-developmental item, U.S. user interest, a valid operational requirement, and good procure-

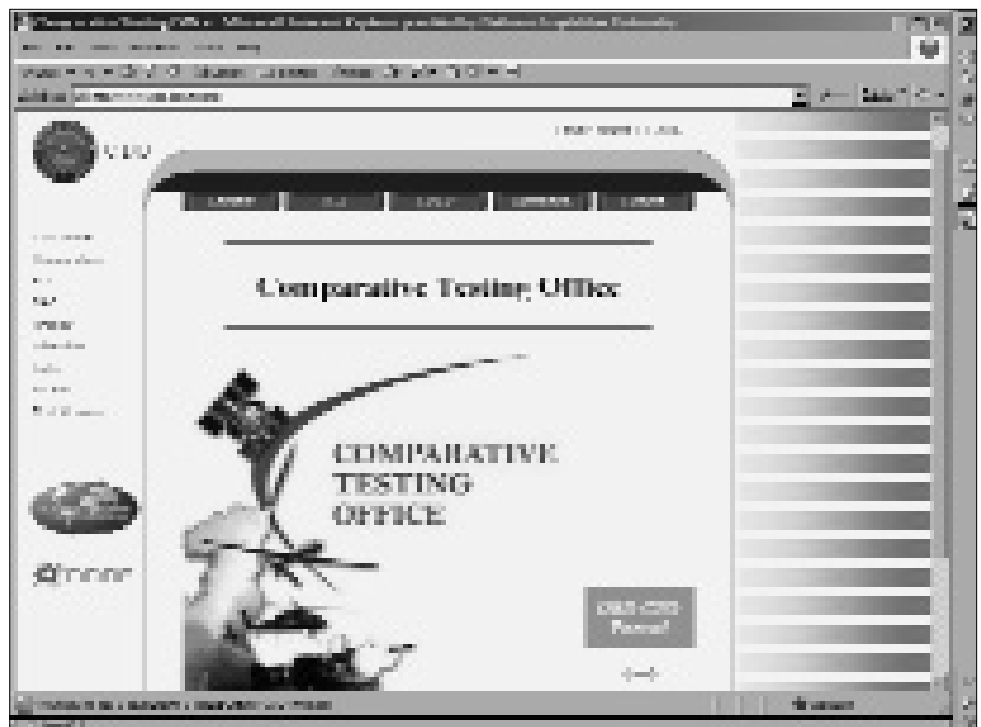
ment potential, the FCT program fields world-class systems and equipment not otherwise available.

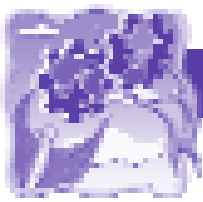
At the same time, by promoting competition and eliminating unnecessary research, development, test, and evaluation expenses, the FCT program reduces total ownership costs of military systems while enhancing standardization and interoperability with coalition allies, promoting international cooperation, and frequently serving as a catalyst for domestic industry partnering and U.S. industry overseas.

Each year, the military services and U.S. Special Operations Command nominate candidate projects for FCT funding consideration. Each proposed project is screened to ensure the fully mature technology addresses valid requirements, to confirm a thorough market survey was conducted to identify all potential contenders, and to verify the U.S. military sponsor has developed a viable acquisition strategy to procure the foreign item if it tests successfully and offers best value.

Of the 18 new start projects, four are sponsored by the Army, four by the Navy, five by the Marine Corps, and five by the U.S. Special Operations Command.

Additional information is available on the FCT Web site: <http://www.acq.osd.mil/cto/>.





GAO REPORTS

The following Government Accountability Office (GAO) reports may be downloaded from the GAO Web site at <http://www.gao.gov>.

Financial Management

21st Century Challenges: Reexamining the Base of the Federal Government, GAO-05-352T, Feb. 16, 2005
Financial Management: Effective Internal Control Is Key to Accountability, GAO-05-321T, Feb. 16, 2005
Loan Commitments: Issues Related to Pricing, Trading, and Accounting, GAO-05-131, Feb. 14, 2005
Fiscal Year 2004 U.S. Government Financial Statements: Sustained Improvement in Federal Financial Management Is Crucial to Addressing Our Nation's Future Fiscal Challenges, GAO-05-284T, Feb. 9, 2005
Long-Term Fiscal Issues: Increasing Transparency and Reexamining the Base of the Federal Budget, GAO-05-317T, Feb. 8, 2005
Core Financial System Requirements: Checklist for Reviewing Systems under the Federal Financial Management Improvement Act, GAO-05-225G, Feb. 1, 2005
Capital Financing: Partnerships and Energy Savings Performance Contracts Raise Budgeting and Monitoring Concerns, GAO-05-55, Dec. 16, 2004

Government Operations

National Nuclear Security Administration: Contractors' Strategies to Recruit and Retain a Critically Skilled Workforce Are Generally Effective, GAO-05-164, Feb. 2, 2005

Information Management

Office of Personnel Management: Retirement Systems Modernization Program Faces Numerous Challenges, GAO-05-237, Feb. 28, 2005

International Affairs

Federal Procurement: International Agreements Result in Waivers of Some U.S. Domestic Source Restrictions, GAO-05-188, Jan. 26, 2005

National Defense

Contract Management: The Air Force Should Improve How It Purchases AWACS Spare Parts, GAO-05-169, Feb. 15, 2005
DoD Systems Modernization: Management of Integrated Military Human Capital Program Needs Additional Improvements, GAO-05-189, Feb. 11, 2005
Military Personnel: DoD Needs to Conduct a Data-Driven Analysis of Active Military Personnel Levels Required to Implement the Defense Strategy, GAO-05-200, Feb. 1, 2005
Military Base Closures: Updated Status of Prior Base Realignments and Closures, GAO-05-138, Jan. 13, 2005
Defense Inventory: DoD and Prime Contractors Adhered to Requirements in Selected Contracts for Overseeing Spare Parts Quality, GAO-05-73, Dec. 20, 2004
Defense Transformation: Clear Leadership, Accountability, and Management Tools Are Needed to Enhance DoD's Efforts to Transform Military Capabilities, GAO-05-70, Dec. 17, 2004

Science, Space, and Technology

Technology Development: New DoD Space Science and Technology Strategy Provides Basis for Optimizing Investments, but Future Versions Need to Be More Robust, GAO-05-155, Jan. 28, 2005

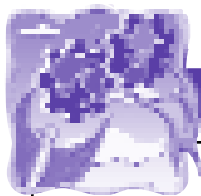
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Have you moved? Do you need to change the number of copies of *Defense AT&L* you're receiving? Do you want to discontinue your subscription?

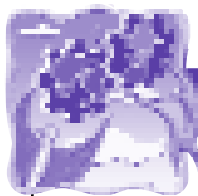
U.S. Postal Service regulations require an original signature and prohibit us from taking these requests over the phone, by fax, or by e-mail. So please fill out and sign the form on page 121 and mail it to us.

Allow eight weeks for your request to take effect.



In the News

DEPARTMENT OF DEFENSE BUDGET FOR FY 2006 Released February 2005 Program Acquisition Costs by Weapon System (Dollars in Millions)		FY2004	FY2005	FY2006
Aircraft				
Army				
AH-64D	Apache	826.5	687.3	793.6
CH-47	Chinook	524.4	869.8	695.7
UH-60	Blackhawk	441.5	639.8	733.1
ACS	Aerial Common Sensor	102.8	145.8	298.2
Navy				
E-2C	Hawkeye	554.1	837.6	878.7
EA-6B	Prowler	271.1	149.8	153.6
F/A-18E/F	Hornet	3,208.0	3,107.0	2,911.0
H-1	USMC H-1 Upgrades	407.0	371.9	349.5
MH-60R	Helicopter	409.2	444.6	602.6
MH-60S	Helicopter	461.5	480.4	629.9
T-45TS	Goshawk	339.2	304.8	239.2
Air Force				
B-2	Stealth Bomber	291.5	365.0	344.3
C-17	Airlift Aircraft	3,670.3	4,258.5	3,662.9
F-15E	Eagle Multi-Mission Fighter	308.5	447.4	276.1
F-16	Falcon Multi-Mission Fighter	392.6	453.2	536.7
F-22	Raptor	5,071.5	4,682.4	4,297.2
DoD Wide/Joint				
C-130J	Airlift Aircraft	862.1	1,595.2	1,623.1
JPATS	Joint Primary Aircraft Training System	295.3	119.4	235.7
JSF	Joint Strike Fighter	4,102.9	4,326.5	5,020.2
UAV	Unmanned Aerial Vehicles	1,307.0	1,870.7	1,511.8
V-22	Osprey	1,624.7	1,697.8	1,779.5
Missiles				
Army				
HIMARS	High Mobility Artillery Rocket System	311.6	385.9	414.0
JAVELIN	AAWS-M	133.9	118.2	57.6
Munitions				
Navy				
ESSM	Evolved Seasparrow Missile	101.3	80.0	99.8
RAM	Rolling Airframe Missile	47.6	47.2	86.9
STANDARD	Missile (Air Defense)	219.9	260.3	291.3
TOMAHAWK	Cruise Missile	426.8	310.6	373.7
TRIDENT II	Sub Launched Ballistic Missile	699.4	805.8	1,022.7
Air Force				
SFW	Sensor Fuzed Weapon	117.0	116.6	120.4
WCMD	Wind Corrected Munitions	88.6	86.2	21.7
DoD-Wide/Joint				
AIM-9X	Sidewinder	80.6	93.2	107.8
AMRAAM	Advanced Medium Range Air-to-Air Missile	175.0	177.7	239.1
JASSM	Joint Air-to-Surface Standoff Missile	145.8	211.7	217.2
JDAM	Joint Direct Attack Munition	726.8	665.4	305.9
JSOW	Joint Standoff Weapon	198.4	153.8	158.9
SDB	Small Diameter Bomb	118.8	114.7	155.1



In the News

DEPARTMENT OF DEFENSE BUDGET FOR FY 2006 Released February 2005 Program Acquisition Costs by Weapon System (Dollars in Millions...continued)

		FY2004	FY2005	FY2006
Vessels				
Navy				
CVN-77	Carrier Replacement Program	1,468.9	975.3	872.9
DD(X)	DD(X) Destroyer	1,015.0	1,468.2	1,800.7
DDG-51	AEGIS Destroyer	3,268.9	3,559.3	225.4
LCS	Littoral Combat Ship	158.3	452.6	613.2
LPD-17	San Antonio Class Amphibious Transport Ship	1,584.4	1,236.3	1,356.1
NSSN	Virginia Class Submarine	2,832.4	2,691.6	2,557.3
RCOH	CVN Refueling Complex Overhaul	214.4	331.7	1,513.6
SSGN	SSGN Conversions	1,223.2	534.9	310.5
T-AKE	Auxiliary Dry Cargo Ship	621.4	768.4	380.1
Combat Vehicles				
Army				
FCS	Future Combat System	1,624.5	2,800.7	3,404.8
	Abrams Tank Upgrade	329.0	441.5	495.8
IAV	Interim Armored Vehicle (Stryker)	1,020.3	1,573.9	905.1
Space Programs				
Army				
DSCS	Ground Systems	104.9	110.5	66.5
Navy				
MUOS	Mobile USER Objective System	84.4	389.4	470.0
Air Force				
AEHF	Advanced Extremely High Frequency Satellite	775.8	685.0	1,194.3
DSP	Defense Support Program	108.5	105.5	42.7
EELV	Evolved Expendable Launch Vehicle	632.3	533.2	864.4
MLV	Medium Launch Vehicles	90.4	82.1	111.2
NAVSTAR GPS	NAVSTAR Global Positioning System	487.2	616.8	719.6
SBIRS-H	Space Based Infrared Systems-High	621.8	594.2	756.6
TSAT	Transformational Satellite Communications	325.1	467.2	835.8
SBR	Space Based Radar	165.0	73.8	225.8
WGS	Wideband Gapfiller Satellite	57.4	109.6	166.4
Other Programs				
Army				
FHTV	Family of Heavy Tactical Vehicles	235.1	227.2	210.5
FMTV	Family of Medium Tactical Vehicles	324.9	593.6	449.6
HMMWV	High Mobility Multipurpose Wheeled Vehicles	1,338.4	432.9	224.2
DoD-Wide/Joint				
MD	Missile Defense	9,066.9	9,900.3	8,844.6



Career Development



Sgt. 1st Class Roger Felix explains the warrant officer application process to a group of interested candidates during a warrant officer briefing at Fort Benning, Ga. Felix, now a first sergeant, is a recruiter with the U.S. Army Recruiting Command.

Photograph by Sgt. 1st Class Tammy M. Jarrett, USA

ARMY NEWS SERVICE (JAN. 18, 2005) **ARMY SEEKING WARRANT OFFICER CANDIDATES**

Sgt. 1st Class Tammy M. Jarrett

WASHINGTON—The Army is looking for candidates to fill some of its 45 different warrant officer specialties, including the new military occupational specialty 923A petroleum systems technician, authorized for Oct. 1.

With the Army's transformation of "units of actions" and retirement, the Army Recruiting Command expects to fill more than 1,200 warrant officer slots this year, said Chief Warrant Officer 3 Anthony L. Edwards.

"The need has always been there," said Edwards, who is the officer in charge of Headquarters, Army Recruiting Command, Fort Knox, Ky. "As the UAs increase, warrant officer slots increase."

Interested soldiers serving in the enlisted feeder MOSs of 92F, 92L, or 92W with a minimum of five years of experience may now apply for the 923A specialty, which will hold its first board in November.

There are also five warrant officer specialties now open to all MOSs, three being in the signal field, said Edwards.

They are: 153A rotary wing aviator, 250N network management technician, 251A information systems technician, 254A signal systems technician, and 882A mobility officer, which was authorized two years ago.

"If you already have a degree in the information systems field (250N, 251A and 245A), you already have what they [warrant officer recruiters] are looking for: experience in the information systems world," Edwards said.

Edwards said they are looking for active-duty personnel, regardless of Service, with five to 12 years of experience.



If a person has more than 12 years, then "we can get a waiver," he said.

Interested candidates must be eligible for and meet the minimum qualifications of the warrant officer MOS for which they are applying. Some candidates may also be able to request a prerequisite waiver.

However, Edwards said, there are five non-waiver criteria every candidate must meet before applying for the Warrant Officer Program:

1. Be a U.S. citizen or naturalized citizen
2. Have a general technical (GT) score of 110 or higher
3. Pass the standard three-event Army Physical Fitness Test and meet height/weight standards
4. Pass a physical for technicians or for aviators
5. Have a secret clearance (interim secret acceptable to apply).

The maximum age for applying for any of the warrant officer MOSs is 46, except for aviator, which is 29. Edwards said the maximum age for aviator will soon change to 32.

For more information on the Warrant Officer Program, board and briefing schedules, and required forms and documents, visit the U.S. Recruiting Command Web site at www.usarec.arm.mil/warrant.

DAU AND NDIA TO SPONSOR DEFENSE SYSTEMS ACQUISITION MANAGEMENT COURSE OFFERINGS FOR INDUSTRY MANAGERS

DAU and the National Defense Industrial Association will sponsor offerings of the Defense Systems Acquisition Management (DSAM) course for interested industry managers May 9–13, at the Pan Pacific Hotel, Vancouver, BC, Canada; and July 18–22, at the Hyatt Regency, Long Beach, Calif. DSAM presents the same acquisition policy information provided to DoD students who attend the Defense Acquisition University courses for formal acquisition certification. It is designed to meet the needs of defense industry acquisition managers in today's dynamic environment, providing the latest information related to:

- Defense acquisition policy for weapons and information technology systems, including discussion of the DoD 5000 series (directive and instruction) and the CJCS 3170 series (instruction and manual)
- Defense transformation initiatives related to systems acquisition
- Defense acquisition procedures and processes

- The planning, programming, budgeting, and execution process and the congressional budget process
- The relationship between the determination of military capability needs, resource allocation, science and technology activities, and acquisition programs.

For further information see "Courses Offered" under "Meetings and Events," at <http://www.NDIA.org>. Industry students contact Christy O'Hara at (703) 247-2586 or e-mail to cohara@ndia.org. A few experienced government students may be selected to attend each offering. Government students must first contact Bruce Moler at (703) 805- 5257, or e-mail Bruce.Moler@dau.mil prior to registering with NDIA.

Online registration is available at: http://register.ndia.org/interview/register.ndia?PID=Brochure&SID=_1CW0YYQ5H&MID=502B.

RELEASE OF THE INTEGRATED DEFENSE AT&L LIFE CYCLE MANAGEMENT FRAMEWORK CHART

The Integrated Defense AT&L Life Cycle Management Framework Chart Version 5.1 dated December 2004 has been approved and is available for viewing and downloading at the AT&L Knowledge Sharing System (AKSS) Web site. Print a copy or view the 2004 chart and the accompanying description definitions at <http://akss.dau.mil/jsp/default.jsp>.

OVERVIEW OF USD(AT&L) CONTINUOUS LEARNING POLICY

Acquisition personnel in Defense Acquisition Workforce Improvement Act (DAWIA) billets who are certified to the level of their position must earn 80 continuous learning "points" to meet Continuous Learning Policy requirements issued by the USD(AT&L) on Sept. 13, 2002. Continuous learning augments minimum education, training, and experience standards. Participating in continuous learning will enhance your career by helping you to:

- Stay current in acquisition functional areas, acquisition and logistics excellence-related subjects, and emerging acquisition policy
- Complete mandatory and assignment-specific training required for higher levels of DAWIA certification
- Complete "desired" training in your career field
- Cross-train to become familiar with, or certified in, multiple acquisition career fields
- Complete your undergraduate or advanced degree
- Learn by experience
- Develop your leadership and management skills.



A point is generally equivalent to one hour of education, training, or developmental activity. Continuous learning points build quickly when you attend training courses, conferences, and seminars; complete leadership training courses at colleges/universities; participate in professional activities; or pursue training through distance learning. Continuous learning points are assigned to distance learning courses <<http://clc.dau.mil>> based on their academic credits or continuing education units. Other activities such as satellite broadcasts, viewing a video tape, listening to an audio presentation, or working through a CD-ROM or Internet course can earn continuous learning points on a 1 point per 1 hour of time devoted to that activity. On-the-job training assignments, intra- and inter-organizational, rotational, broadening, and developmental assignments may also qualify toward meeting the continuous learning standards.

ATTENTION ACQUISITION WORKFORCE PERSONNEL! ACQUISITION CERTIFICATIONS

Please be aware that if you are requesting certification in any of the acquisition career fields you must ensure that all requirements are met and are in accordance with the most recent Defense Acquisition University Catalog and the Acquisition Support Center's (ASC's) Policy and Procedures at <<http://www.asc.army.mil>>. To ensure your request and Acquisition Career Record Brief (ACRB) are up-to-date, go to <<http://www.dau.mil>>. Go to the Catalog section, select Appendix B, and follow the checklist requirements for the career field in which you are requesting certification.

DAU's Certification Checklist and ASC's Policy and Procedures change periodically, and DAU catalogs are reprinted annually. Please note that a copy of your most current résumé should accompany your request. If you are applying for systems engineering or test and evaluation certification, you must also submit a copy of your transcripts. For contracting and purchasing certification, electives are now required. All ACRB and certification questions should be directed to your acquisition career manager prior to submission. Completion of course(s) alone does not automatically certify an individual; certification must be requested and all requirements met.

For more information on certification procedures, visit <<http://www.asc.army.mil>>, or call Herman Gaines Jr., at (703) 704-0123, or e-mail: herman.gainesjr@us.army.mil.

DOD BEST PRACTICES CLEARINGHOUSE

The DoD Best Practices Clearinghouse (BPCh) is being established to provide a single source to identify, select, and implement validated acquisition-related practices for specific program needs. With sponsorship from the assistant secretary of defense for network information integration and the acting under secretary of defense (acquisition, technology and logistics), the BPCh will provide information on OSD best practices.

The BPCh consists of an integrated set of processes, tools, data, and people to maintain a continuously improving resource of best practice information. Its concept revolves around the ability to distill information about practices—lessons learned, research reports, measurement data—into a relatively small profile that is easy to comprehend and manipulate, while maintaining connectivity to the source material.

Successful practice implementation depends heavily on the target environment. While the BPCh will be publicly available for anonymous use, users may register a profile of their preferences and/or a collection of profiles that describe their programs, enabling the BPCh to filter out processes that are not applicable.

The BPCh will be a useful resource for capturing information about the characteristics of practices and for supporting practice selection. It is a combination of processes, personnel, and information technology that interacts with its community to ensure accuracy and satisfaction. It is also integrated with the expertise resident in the other major DoD-sponsored knowledge systems (AT&L Knowledge Sharing System, Acquisition Community Connection, and *Defense Acquisition Guide*).

An initial BPCh prototype is being demonstrated at the April 2005 System and Software Technology Conference. An advanced prototype for limited operational evaluation is scheduled for demonstration at the National Defense Industrial Association Systems Engineering Conference in October 2005, with full online system operation and public access planned for fall of 2006.

For more information on the BPCh, contact John Hickok at john.hickok@dau.mil.



Policy & Legislation

DEFENSE FAR SUPPLEMENT (DFARS) CHANGE NOTICE 20041215

Department of Defense published the following changes and proposed changes to the DFARS on Dec. 15, 2004.

Interim Rule

Contract Period for Task and Delivery Order Contracts (DFARS Case 2003-D097/2004-D023)

Limits the ordering period of a task or delivery order contract awarded under the authority of 10 U.S.C. 2304a to not more than 10 years, unless the head of the agency determines that exceptional circumstances require a longer ordering period. This rule revises the interim rule published on March 23, 2004 (DFARS Change Notice 20040323), which contained a 5-year limit on task or delivery order contracts. The rule implements Section 843 of the National Defense Authorization Act for Fiscal Year 2004 and Section 813 of the National Defense Authorization Act for Fiscal Year 2005. The *Federal Register* notice for this rule is available at <http://www.acq.osd.mil/dpap/dfars/chnotices/20041215_files/2003-D097.txt>.

Final Rules—DFARS Transformation

The following changes are a result of DFARS Transformation, which is a major DoD initiative to dramatically change the purpose and content of the DFARS. Additional information on the DFARS Transformation initiative is available at <<http://www.acq.osd.mil/dpap/dfars/transf.htm>>. Three of the following changes relocate text to the new DFARS companion resource, *Procedures, Guidance, and Information (PGI)*, available at <<http://www.acq.osd.mil/dpap/dars/pgi>>.

Improper Business Practices and Contractor Qualifications Relating to Debarment, Suspension, and Business Ethics (DFARS Case 2003-D012)

Consolidates text on reporting of improper business practices to the appropriate authorities; updates a contract clause addressing prohibitions on persons convicted of fraud or other defense contract-related felonies; and relocates to PGI, procedures for referring matters to the agency debarment and suspending official. The *Federal Register* notice for this rule is available at <http://www.acq.osd.mil/dpap/dfars/chnotices/20041215_files/2003-D012.txt>.

DoD Pilot Mentor-Protégé Program (DFARS Case 2003-D013)

Changes the DoD Pilot Mentor-Protégé Program to authorize the Director, Small and Disadvantaged Business Utilization (SADBU), of each military department or defense agency to approve contractors as mentor firms and to approve mentor-protégé agreements. The Director, Office of the Secretary of Defense, SADBU, will retain policy and oversight responsibility and will remain the principal budget authority for the program. This rule also revises the structure of DFARS Appendix I for clarity and to reflect current program requirements. The *Federal Register* notice for this rule is available at <http://www.acq.osd.mil/dpap/dfars/chnotices/20041215_files/2003-D013.txt>.

Competition Requirements (DFARS Case 2003-D017)

Deletes text that is obsolete or duplicative of FAR policy; and relocates procedures for documenting reasons for use of other than full and open competition to PGI. The *Federal Register* notice for this rule is available at <http://www.acq.osd.mil/dpap/dfars/chnotices/20041215_files/2003-D017.txt>.

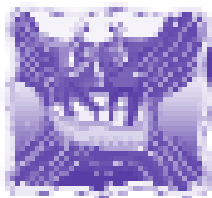
Construction and Architect-Engineer Services (DFARS Case 2003-D035)

Relocates to PGI, procedures for establishment of evaluation criteria in the selection of firms for architect-engineer contracts; deletes unnecessary text on preselection boards and selection authorities; and replaces a reference to Standard Form 254, Architect-Engineer and Related Services Questionnaire, with a reference to its replacement, Standard Form 330, Architect-Engineer Qualifications. The *Federal Register* notice for this rule is available at <http://www.acq.osd.mil/dpap/dfars/chnotices/20041215_files/2003-D035.txt>.

Final Rules—Legislative

Free Trade Agreements—Chile and Singapore (DFARS Case 2003-D088)

Finalizes, with changes, the interim rule published on Jan. 13, 2004 (DFARS Change Notice 20040113), to implement new Free Trade Agreements with Chile and Singapore. The new Free Trade Agreements waive the applicability of the Buy American Act for some foreign supplies and construction materials from Chile and Singapore, and specify procurement procedures designed to ensure fairness. The changes in the final rule delete



text on the applicability of U.S. law to resolve any breach of contract, since this issue is now addressed in the clause at FAR 52.233-4, Applicable Law for Breach of Contract Claim. The final rule also contains a minor change to clarify procedures for application of the Free Trade Agreements when evaluating foreign offers for supplies. The *Federal Register* notice for this rule is available at <http://www.acq.osd.mil/dpap/dfars/chnotices/20041215_files/2003-D088.txt>.

Firefighting Services Contracts (DFARS Case 2003-D107)

Finalizes, without change, the interim rule published on June 25, 2004 (DFARS Change Notice 20040625), to implement Section 331 of the National Defense Authorization Act for Fiscal Year 2004. Section 331 permits the award of contracts for firefighting functions at military installations or facilities for periods of one year or less, if the functions would otherwise have to be performed by members of the armed forces who are not readily available due to a deployment. The *Federal Register* notice for this rule is available at <http://www.acq.osd.mil/dpap/dfars/chnotices/20041215_files/2003-D107.txt>.

DEFENSE FAR SUPPLEMENT (DFARS) CHANGE NOTICE 20050113

DoD published the following change to the DFARS on Jan. 13, 2005 :

Interim Rule

Free Trade Agreements—Australia and Morocco (DFARS Case 2004-D013)

Implements new Free Trade Agreements with Australia and Morocco . The Free Trade Agreements waive the applicability of the Buy American Act for some foreign supplies and construction materials from Australia and Morocco, and specify procurement procedures designed to ensure fairness. This DFARS change also updates terminology related to international trade agreements, and updates the list of countries eligible to participate in DoD procurements covered by the trade agreements, in accordance with policy of the U.S. Trade Representative. A corresponding change to the FAR was published in *Federal Acquisition Circular* 2001-27 on Dec. 28, 2004 .

The *Federal Register* notice for this rule is available at <http://www.acq.osd.mil/dpap/dfars/chnotices/20050113_files/2004-D013.txt> .

DA 73-1, TEST AND EVALUATION POLICY (DEC. 10, 2004)

ARMY PUBLISHES RAPID ACTION REVISION

The revised Department of the Army (DA) Regulation 73-1, *Test and Evaluation Policy*, effective Dec. 10, 2004, implements the policies and procedures contained in Department of Defense Directive (DoDD) 3200.11, DoDD 5000.1, DoD Instruction 5000.2, and the *Defense Acquisition Guidebook*. Specifically, it prescribes implementing policies for the Army's testing and evaluation program. It applies to all systems acquired under the auspices of the DA 70-series, including command, control, communications, computers, and intelligence/information technology.

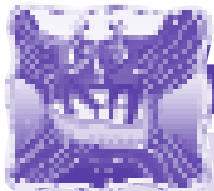
In addition, the revised regulation also implements the U.S. Army Test and Evaluation Command cross-functional teams and the evolutionary materiel development process. It redefines the test and evaluation role of the U.S. Army Space and Missile Defense Command and the heightened role of commercial products and practices and commercial and/or nondevelopmental items.

This regulation states implementing policies and responsibilities for conducting test and evaluation and authorizes the procedures in DA Pamphlet 73-1. View the revised regulation on the Army Publishing Directorate Web site at <http://www.usapa.army.mil/usapa_official_site.htm>.

DA 700-90, ARMY INDUSTRIAL BASE PROCESS (JAN. 2, 2005)

ARMY PUBLISHES MAJOR REVISION

The Army's revised DA 700-90, *Army Industrial Base Process*, implements higher authority goals, objectives, and policy regarding national policy on the national technology and industrial base. This major revision focuses on the industrial base and policies associated with assessing its ability to effectively support operations, surge, and sustainability. It also includes Army policy for the following activities: market research, industrial capability assessments; Defense Priorities and Allocations System; Defense Production Act, Title I and Title III; strategic and critical materials; managing Army industrial equipment, plant equipment packages, and Army Reserve plants; production base support; and selected production engineering-related programs. Procedures have been deleted from this regulation to enable more innovation and flexibility in executing the policies contained in the regulation.



Policy & Legislation



ACQUISITION,
TECHNOLOGY AND
LOGISTICS

**THE UNDER SECRETARY OF DEFENSE
3010 DEFENSE PENTAGON
WASHINGTON, DC 20301-3010**

NOV 23 2004



MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS
ATTN: SERVICE ACQUISITION EXECUTIVES
DIRECTORS, DEFENSE AGENCIES

SUBJECT: Functional Independence of Contracting Officers

This memorandum reissues and supersedes the Under Secretary of Defense for Acquisition memorandum of June 2, 1993, on the same subject. Contracting officers provide vital support to program offices and to other requiring activities in the acquisition process. A good working relationship among all personnel involved in the acquisition process is critical to efficiently and effectively meet our defense needs.

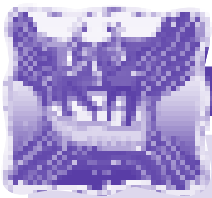
In particular, expertise in the contracting field requires knowledge of a large number of laws, regulations, directives and instructions, as well as the skill and experience to operate successfully in a business environment. The proper exercise of this expertise requires the ability to act independently without improper influence on business decisions. Such independence does not imply a lack of support for the rest of the acquisition matrix. On the contrary, the best support that can be given by the contracting staff is the competent exercise of contracting skills involving sound business judgment.

To retain a degree of independence that allows unbiased advice based on the principles of sound business, contracting officers' evaluations will be performed within their own career program channels. The only exception will be the performance evaluation of the senior official in charge of contracting for the organization, such as the head of the contracting office. However, this exception is not appropriate when the senior official in charge of contracting is the primary contracting officer for the contracts executed within that office. Such a performance evaluation process is not inconsistent with providing support to program managers and others in the requiring community. It should be routine practice to seek input from program managers when evaluating contracting personnel.

Please share this memorandum with all of your acquisition communities. My point of contact is Ms. Teresa Brooks at teresa.brooks@osd.mil or (703) 681-8309.


Michael W. Wynne
Acting





**THE UNDER SECRETARY OF DEFENSE
3010 DEFENSE PENTAGON
WASHINGTON, DC 20301-3010**

DEC 23 2004

MEMORANDUM FOR: SEE DISTRIBUTION

SUBJECT: Policy for Unique Identification (UID) of Tangible Personal Property Legacy Items in Inventory and Operational Use, Including Government Furnished Property (GFP)

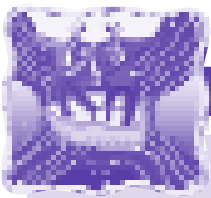
Effective immediately, this policy update establishes the requirement to apply UID to existing personal property items in inventory and operational use, that is, legacy items. In addition, the policy is formally extended to specifically include items manufactured by organic DoD depots. This policy for legacy personal property items does not impact the mandatory UID DFARS clause to be included in all new solicitations and contracts issued after January 1, 2004, as stated in my UID Policy Memoranda.

UID will be a cornerstone of DoD Business Transformation. Therefore, I request that the Military Departments direct all program and item managers to plan for and implement UID for existing legacy personal property items in inventory and in operational use. UID plans should take an evolutionary approach, as I understand there are physical and resource concerns. ACAT 1D programs must submit UID program plans to the UID Program Office by June 2005. All other programs must submit plans to their respective Milestone Decision Authorities by January 2006. Periodic reviews of the UID program plans will be conducted by the respective Milestone Decision Authorities.

The plans should target Fiscal Year (FY) 2007 as the point by which: (a) all existing serialized assets that meet the criteria for UID have been entered in the UID registry, and (b) UID marking capabilities have been established for all existing items and embedded assets such that marking can commence as applicable equipment items are returned for maintenance. I request that all program and item managers plan to complete UID marking of items and all applicable embedded assets within existing items by December 31, 2010, using the planning guidelines included in the attachment. It is recognized that programs will have different levels of completion by 2010 because fielded items will not be removed from service for the sole purpose of UID marking. In addition, programs or items that will be phased out of inventory by December 31, 2010, should be set apart in the plans for an exemption to the UID requirement.

In the case of DoD organic depot maintenance operations, the DUSD (Logistics and Materiel Readiness) shall develop a UID implementation plan specifically for legacy personal property items; the initial version of the plan will be published by May 31, 2005. The Military Departments should plan on establishing initial depot operating capabilities for these legacy items by July 2005, at those depot facilities currently involved with UID for depot-manufactured items. Full Operating Capability (FOC) at all organic depots will be put in place not later than FY 2007. Prior to December 2005, DUSD (Logistics and Materiel Readiness) will publish an FOC UID Concept of Operations for DoD maintenance.





Policy & Legislation

Effective January 1, 2006, all Government Furnished Property (GFP) must meet the UID policy requirements. To achieve this goal, I have asked the Director, Defense Procurement and Acquisition Policy, to implement the UID policy requirements in regulations and guidance, as appropriate. I have also directed the DoD UID Program Management Office to accomplish the tasks specified in the attachment. Information on other specific UID implementation issues is detailed in the attachment.

The Director, Defense Contract Management Agency (DCMA) has the authority to grant short-term extensions on UID implementation if such extensions are consistent with the implementation schedules of the negotiated corporate or facility strategies. I have also asked DCMA to issue a quality assurance plan for UID with the technical information and references for UID marking compliance. The quality assurance plan is expected to be released in January 2005.

I am pleased that since the forecast of the UID policy for legacy items was announced, the Military Departments have developed and submitted five model program plans: FA-18 Hornet/Super Hornet, CH-47 Chinook, C-17 Globemaster III, UH-60 Blackhawk, and AH-64 Apache. Industry experience with UID continues to demonstrate the savings that may be achieved once infrastructure and process investments occur. Use of this data key will continue to enhance potential knowledge-enabled logistics. I will be conducting roundtable discussions with the Army, Navy, Air Force, and Defense Logistics Agency leadership on the overall progress and challenges in modernizing the infrastructure, reengineering business processes, and revising Automated Information Systems (AIS) to implement UID.

The Director of DCMA, together with our industry partners, is leading the development of strategies using Single Process Initiatives (SPI) and block changes to expedite UID implementation. I am especially pleased with the initial response we received from Rockwell Collins International. Development of SPIs and block changes will continue as a vital part of this overall transformation.

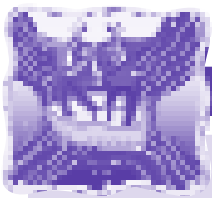
Current UID information and the latest version of the ***DoD Guide to Uniquely Identifying Items*** are available at <http://www.acq.osd.mil/dpap/UID/>. Policy questions or comments may be addressed to Mr. Robert Leibrandt by telephone at (703) 695-1099 or by e-mail at robert.leibrandt@osd.mil.



Michael W. Wynne
Acting

Attachment
As stated

Editor's note: View the distribution and attachment to this memorandum at <http://www.acq.osd.mil/dpap/UID/index.htm>.



**THE UNDER SECRETARY OF DEFENSE
3010 DEFENSE PENTAGON
WASHINGTON, DC 20301-3010**



JAN 4 2005

MEMORANDUM FOR INFRASTRUCTURE EXECUTIVE COUNCIL MEMBERS
INFRASTRUCTURE STEERING GROUP MEMBERS
JOINT CROSS-SERVICE GROUP CHAIRMAN

Subject: 2005 Base Closure and Realignment Selection Criteria

The Ronald Reagan National Defense Authorization Act for Fiscal Year 2005, Public Law 108-375, amended the Defense Base Closure and Realignment Act of 1990, Public Law 101-510, to specify the selection criteria. Specifically, the amendment revised the criteria previously published by the Secretary of Defense by adding the word "surge" to criterion three. The amendment also revised the wording, but not the meaning, of criteria one and seven, to avoid the use of the possessive.

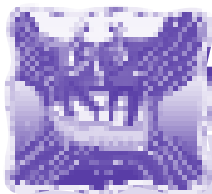
The Department shall use the attached 2005 Base Closure and Realignment (BRAC) Selection Criteria, along with the force-structure plan and infrastructure inventory, to make recommendations for the closure or realignment of military installations inside the United States, as defined in the base closure statute. This direction supersedes any previous direction regarding selection criteria for the BRAC 2005 process. The 2005 BRAC Commission will also use these criteria in their review of the Department of Defense's final recommendations.

Michael W. Wynne
Acting USD (Acquisition, Technology & Logistics)
Chairman, Infrastructure Steering Group

Attachment:
As stated

Editor's note: View the attachment to this memorandum at <http://www.defenselink.mil/brac/>.





ACQUISITION,
TECHNOLOGY AND
LOGISTICS

**THE UNDER SECRETARY OF DEFENSE
3010 DEFENSE PENTAGON
WASHINGTON, DC 20301-3010**

JAN 13 2005

MEMORANDUM FOR CHAIRMAN, DEFENSE SCIENCE BOARD

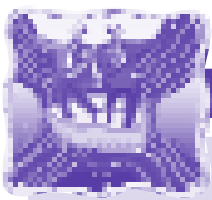
SUBJECT: Terms of Reference—Defense Science Board 2005 Summer Study on Transformation: A Progress Assessment

Since the end of the Cold War, the Department of Defense has engaged in a wide range of military and humanitarian operations. As President G.W. Bush stated in the 2002 National Security Strategy, “The major institutions of American national security were designed in a different era to meet different requirements. All of them must be transformed.” In response to this call to arms, the Department of Defense initiated wide-ranging plans, policies, and programs to transform itself. As described in the Secretary of Defense’s 2003 Transformation Planning Guidance (TPG), the scope of the Department’s transformation efforts encompassed how we fight, how we do business, and how we work with others. While the TPG states, “There will be no moment at which the Department is transformed,” the Department must evaluate both the effectiveness and the direction of its transformation efforts.

You are requested to form a Defense Science Board Summer Study to provide an assessment of the Department’s continuing transformation process. The assessment should describe the current status of the Department’s transformation efforts, identify the appropriate transformation objectives, and recommend ways and means to meet the emerging and persistent challenges as identified in the 2004 National Defense Strategy.

The TPG outlined the Department’s three-part strategy for transformation: Transformed culture, Transformed processes, and Transformed capabilities. Within the Department’s transformation scope and strategy, the Study should consider all the following:

1) Concepts and Experimentation. Post-Cold War operational concepts are continuously evolving. In response to the Secretary’s request for joint concepts of operations, the concept community developed a family of joint concepts organized in a hierarchy including the overarching Joint Operations Concepts (JOpsC), subordinate Joint Operating Concepts (JOC), supporting Joint Functional Concepts (JFC), and detailed Joint Integrating Concepts (JIC). In addition, the Services developed supporting service concepts. The Air Force is developing the Air Force Concepts of Operations (CONOPS); the Navy and Marine Corps are developing the Naval Operating Concept for Joint Operations (NOC); and the Army is pursuing the Future Force concept. These concepts address the development of future joint forces’ transformational capabilities and characteristics, but an assessment is needed of the state of the joint concept development and experimentation process that integrates Service-provided capabilities into effective joint operational capabilities. Further, the assessment should examine how well the Department integrates the rest of the U.S. Government (USG) capabilities to provide the capabilities to deal with 21st Century adversaries. The Study should address alternative operational constructs and concept development processes, which would enable the Department of Defense to better meet the challenges of the 21st century by applying the entire array of power available to the USG. The Study must focus on important functional concepts and capabilities, such as logistics and battlespace awareness, which provide essential elements to implementing joint concepts. Finally, experimentation provides an important feedback mechanism into the iterative development of joint concepts. Consequently, the study must assess the state of experimentation, the



interrelationships between a series of experiments within an experimental campaign, and, especially, the relationship and involvement of Service and Combatant Command experimentation efforts.

2) International competitors seek to develop and possess breakthrough technical capabilities intended to supplant U.S. advantages in particular operational domains. Because of this aspect of the security environment, the study should address disruptive challenges from a variety of sources such as technology, demographics, and legal. In addition, the Study should define the scope of the problem and capabilities DoD requires to address these challenges.

3) As an element of net-centric operations, the Department is developing a broad range of networked systems to generate new capabilities and multiply existing force structure effectiveness. The Study should assess the adequacy and effectiveness of the approaches to realize the potential advantages of net-centric operations.

4) The Department's force structure still is burdened with Cold War legacy components. A significant transformation effort seeks to transform the joint force into smaller, rapid, more agile forces with greater deployability and lethality than much of the current force. However, strategic guidance and operational experience confirm that some joint force operations will continue to require sustained presence and an ability to confront heavy, concentrated firepower to achieve desired effects and mission accomplishment. Since the Department's transformation efforts must reconcile expeditionary agility and responsiveness with persistence and durability, the study should focus on the Department's need for evolving joint forces to cover the spectrum of military engagement and accomplish the full range of missions assigned to DoD.

5) The Study should provide insights into two approaches to adaptability. The first examines how DoD might provide for high adaptability of the force by increasing the tempo of inserting promising science and technology initiatives into the acquisition process. The second approach should compare materiel, technological, conceptual, and organizational efforts to provide adaptability to surprise.

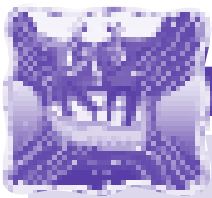
6) Industry partners are key to providing transformational capabilities. Consolidation since the Cold War peak has reduced the number of market participants (~ 32 to 8) at prime and subsystem levels. The Study should assess the suitability of the structure of the defense industry to the needs of Transformation.

7) Culture is a decisive characteristic of innovative military organizations. Future joint operations envision increasingly complex and heavy cognitive demands on personnel at all levels. The Department must examine how to adapt its culture to producing personnel able to meet the high knowledge demands of interdependent joint, interagency, and multinational operations. In addition, the Study should focus specifically on the human resources needed to develop and acquire new materiel, adapt existing systems to leverage past investment, exploit technologies, design organizations, and devise knowledge management procedures.

8) The Department's business processes, including its logistics and acquisition practices, must support and facilitate transformation. The assessment should evaluate progress made towards streamlining and reforming these processes and recommend a strategy for going forward especially in the area of acquisition of joint interoperable systems.

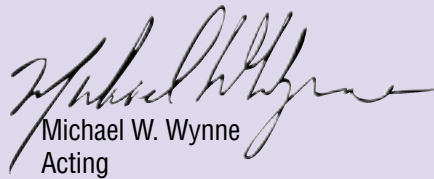
The Task Force will provide an interim report by May 2005.

The Study will be sponsored by me as the Acting Under Secretary of Defense (Acquisition, Technology and Logistics), Under Secretary of Defense (Policy), Under Secretary of Defense (Personnel and Readiness), Director, Force Transformation, and Director, Defense Research and Engineering. Gen Larry Welch, USAF (retired), and Dr. Robert Hermann will serve as the Task Force Chairmen. Dr. Jerry McGinn, OUSD(P), will serve as the Executive Secretary, and Lt Col Dave Robertson, USAF, will serve as the Defense Science Board Secretariat representative.

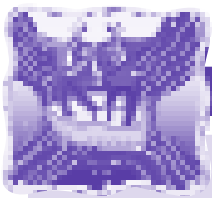


Policy & Legislation

The Task Force will operate in accordance with the provisions of P.L. 92-463, the “Federal Advisory Committee Act,” and DoD Directive 5105.4, the “DoD Federal Advisory Committee Management Program.” It is not anticipated that this Task Force will need to go into any “particular matters” within the meaning of Section 208 of Title 18, U.S. Code, nor will it cause any member to be placed in the position of acting as a procurement official.



Michael W. Wynne
Acting



SECRETARY OF THE ARMY WASHINGTON



07 JAN 2005

MEMORANDUM FOR: SEE DISTRIBUTION

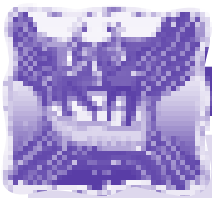
SUBJECT: Accounting for Contract Services

1. The Department of Defense Business Initiative Council (BIC) has sponsored an Army initiative to obtain better visibility of the contractor service workforce. Pursuant to this initiative, I am asking for your support in obtaining this information from contractors supporting the Army.
2. We must improve visibility of the entire workforce supporting the Army mission. This initiative is a first step in our plan to program and document contractor support in The Army Authorization Documentation System, The Structure and Manpower Allocation System, and the Civilian Manpower Integrated Costing System in time for use in Total Army Analysis 13.
3. Army Requiring Activities are defined as the organizational units that submit a written requirement or statement of need for services that are to be satisfied by a contract. Army Requiring Activities and their supporting contracting offices should include the reporting requirement defined on the enclosure as a deliverable in all new contract actions beginning 60 days from the date of this memorandum. This will ensure that contractors will be paid the fair and reasonable costs associated with providing the data. This approach will also provide the Army full visibility into the costs of obtaining the data.
4. Including the reporting requirement as a line item in contracts is a responsibility of Army Requiring Activities that will be monitored by Army administrative contracting officers. Ensuring that contractors report the required information is the responsibility of officials certifying payment to a contractor, such as Contracting Officer Representatives.
5. Guidance which more specifically defines the information requirements for Army Requiring Activities and implementing guidance for the contracting workforce will be provided under separate cover from the Assistant Secretary of the Army (Manpower and Reserve Affairs) and the Assistant Secretary of the Army (Acquisition, Logistics and Technology).



Francis J. Harvey

Encl
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Policy & Legislation



UNDER SECRETARY OF THE AIR FORCE WASHINGTON



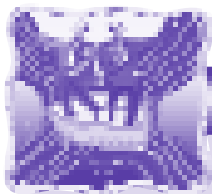
MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS
CHAIRMAN OF THE JOINT CHIEFS OF STAFF
UNDER SECRETARY OF DEFENSE (ACQUISITION,
TECHNOLOGY AND LOGISTICS)
UNDER SECRETARY OF DEFENSE (INTELLIGENCE)
ASSISTANT SECRETARY OF DEFENSE (NETWORKS
AND INFORMATION INTEGRATION)
DIRECTOR, OPERATIONAL TEST AND EVALUATION
DIRECTOR, PROGRAM ANALYSIS AND EVALUATION

DEC 27 2004

SUBJECT: Update to the National Security Space Acquisition Policy 03-01

In our continuing efforts to improve the way the Department of Defense (DoD) acquires critical space systems, I have updated the National Security Space Acquisition Policy 03-01 process. The updates reflect lessons learned from the Space Based Infrared System and Future Imagery Architecture programs, and the Defense Space Acquisition Board process. The modified space acquisition process provides more timely opportunities for Milestone Decision Authority reviews throughout the execution of the program and is consistent with the National Reconnaissance Office Directive 7 process.

This document supersedes the National Security Space Acquisition Policy 03-01 dated 6 October 2003. The National Security Space Acquisition Policy 03-01 falls under the authority of DoD Directive 5000.1 and replaces processes and procedures described in DoD Instruction 5000.2. Implementation of this guidance is effective immediately.



Policy & Legislation



OFFICE OF THE UNDER SECRETARY OF DEFENSE

3000 DEFENSE PENTAGON
WASHINGTON, D.C. 20301-3000

DEC 17, 2004



DPAP/EB

MEMORANDUM FOR DIRECTORS, DEFENSE AGENCIES

DEPUTY ASSISTANT SECRETARY OF THE ARMY
(POLICY AND PROCUREMENT), ASA(ALT)
DEPUTY ASSISTANT SECRETARY OF THE NAVY
(ACQUISITION MANAGEMENT), ASN(RDA)
DEPUTY ASSISTANT SECRETARY OF THE AIR FORCE
(CONTRACTING), SAF/AQC
DEPUTY DIRECTOR FOR LOGISTICS OPERATIONS (DLA)
DIRECTOR, ARMY CONTRACTING AGENCY
DIRECTOR, ADMINISTRATION AND MANAGEMENT

SUBJECT: Transition to the On-line Representations and Certifications Application (ORCA)

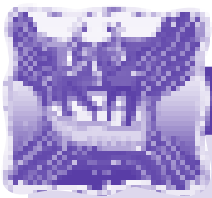
This letter is a reminder of the upcoming implementation of the On-line Representations and Certifications Application (ORCA), a project within the Federal Integrated Acquisition Environment (IAE) e-Government initiative. ORCA simplifies our historically paper-based process and enables vendors to submit their representations and certifications on-line to a central location. The upcoming publication of Federal Acquisition Circular (FAC) 26 changes the Federal Acquisition Regulation (FAR), effective in January 2005, to require the use of ORCA with few exceptions. The final rule that will be included in FAC 26 is available on the DPAP/EB website <http://www.acq.osd.mil/dpap/ebiz/index.htm> under Policies/Guidelines.

As a result of the FAR changes, vendors will complete and update the on-line provisions in ORCA www.bpn.gov/orca on at least a yearly basis. Then, by virtue of a new clause (to be numbered 52.204-XX, entitled "Annual Representations and Certifications") included in solicitations, vendors will attest that at the time of their offer submissions, their records at ORCA are current, accurate, and complete. Notification of these impending FAR changes is being sent to all active registrants in the Central Contractor Registration (CCR) database.

The primary impact of the ORCA-related FAR changes on our workforce is the aforementioned requirement to include the new clause in solicitations in lieu of several provisions. Please be aware that while ORCA includes most common provisions, it does not include all of the provisions prescribed in the FAR. Also, as it is a federal-level system, it does not yet include Defense FAR Supplement (DFARS) or Component-level provisions. These provisions still need to be included in solicitations when prescribed.

Once implemented, ORCA will be considered the authoritative source for vendor-completed representations and certifications for the entire federal government. Since our contracting offices are not required to maintain paper copies of the records that are maintained in ORCA, transition should result in an improved environment that reduces paper submission, collection, and work associated with tracking of these records. Vendors' records are easily searched in ORCA by their DUNS numbers and by dates of submission.





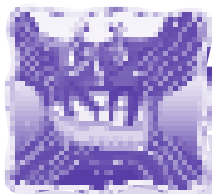
Policy & Legislation

The Acquisition Domain assembled a DoD ORCA transition team composed of component policy and contract writing system representatives. This team is working with DoD components to identify and resolve any key issues and requirements associated with the transition, raise awareness of this change, and ensure DoD issues are properly represented at the federal level. The following representatives are members of the transition team should you need additional information specific to your component:

- Department of Army—Lee Kumbar, lkumbar@alexandria-emh1.army.mil
- Department of Navy—Brian Fahey, brian.fahey1@navy.mil
- Department of Air Force—Maj Randy Rivera, randy.rivera@pentagon.af.mil
- Defense Logistics Agency (DLA)—LCDR Mike Ryan, john.ryan@dla.mil
- Defense Information Systems Agency (DISA)—Lynne Maue, mauel@scott.disa.mil
- Other Defense Agencies—Lisa Romney, lisa.romney@osd.mil
- Standard Procurement Systems (SPS) Joint Program Management Office (JPMO)—Joyce Allen, joyce.allen@eis.army.mil

My action officer regarding this subject is Lisa Romney, 703-614-3883, lisa.romney@osd.mil.

Deidre A. Lee
Director, Defense Procurement
and Acquisition Policy



ACQUISITION,
TECHNOLOGY AND
LOGISTICS

**OFFICE OF THE UNDER SECRETARY OF DEFENSE
3000 DEFENSE PENTAGON
WASHINGTON, DC 20301-3000**

JAN 24 2005

MEMORANDUM FOR DIRECTORS OF DEFENSE AGENCIES

DEPUTY ASSISTANT SECRETARY OF THE ARMY (POLICY AND
PROCUREMENT), ASA(ALT)
DEPUTY ASSISTANT SECRETARY OF THE NAVY (ACQUISITION
MANAGEMENT), ASN(RDA)
DEPUTY ASSISTANT SECRETARY OF THE AIR FORCE (CONTRACTING),
SAF/AQC
EXECUTIVE DIRECTOR, LOGISTICS POLICY AND ACQUISITION
MANAGEMENT (DLA)

SUBJECT: Suspension of the Price Evaluation Adjustment for Small Disadvantaged Businesses

Effective 30 days after the date of this memorandum, all Department of Defense (DoD) contracting activities shall continue to suspend the use of the price evaluation adjustment for small disadvantaged businesses (SDBs) in DoD procurement, as prescribed in the Federal Acquisition Regulation (FAR) subpart 19.11 and Defense Federal Acquisition Regulation Supplement (DFARS) subpart 219.11.

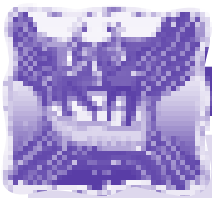
Subsection 2323(e) of title 10, United States Code (U.S.C.), as amended by section 801 of the Strom Thurmond National Defense Authorization Act for Fiscal Year 1999 and section 816 of the Bob Stump National Defense Authorization Act for Fiscal Year 2003, require DoD to suspend the regulation implementing the authority to enter into a contract for a price exceeding fair market cost if the Secretary determines at the beginning of the fiscal year that DoD achieved the 5 percent goal established in 10 U.S.C. 2323(a) in the most recent fiscal year for which data are available. Based on the most recent data for Fiscal Year 2004, the determination was made that DoD exceeded the 5 percent goal established in 10 U.S.C. 2323(a) for contract awards to SDBs. Accordingly, use of the price evaluation adjustment prescribed in FAR 19.11 and DFARS 219.11 is suspended for DoD.

This suspension applies to all solicitations issued from February 24, 2005, to February 23, 2006.

Deidre A. Lee
Director, Defense Procurement
and Acquisition Policy

cc: DSMC





ACQUISITION,
TECHNOLOGY AND
LOGISTICS

DPAP/EB

**OFFICE OF THE UNDER SECRETARY OF DEFENSE
3000 DEFENSE PENTAGON
WASHINGTON, DC 20301-3000**

JAN 24 2005

MEMORANDUM FOR DIRECTOR, ADMINISTRATION AND MANAGEMENT
DIRECTORS, DEFENSE AGENCIES
DEPUTY ASSISTANT SECRETARY OF THE ARMY
(POLICY AND PROCUREMENT), ASA(ALT)
DIRECTOR, ARMY CONTRACTING AGENCY
DEPUTY ASSISTANT SECRETARY OF THE NAVY
(ACQUISITION MANAGEMENT), ASN(RDA)
DEPUTY ASSISTANT SECRETARY OF THE AIR FORCE
(CONTRACTING), SAF/AQC
DEPUTY DIRECTOR FOR LOGISTICS OPERATIONS (DLA)

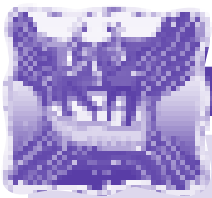
SUBJECT: Update on Transition to the Federal Procurement Data System—Next Generation (FPDS-NG)

I am taking this opportunity to provide you with an update regarding the Department of Defense's (DoD) transition to the Federal Procurement Data System—Next Generation (FPDS-NG). I also want to recognize the hard work and dedication displayed by those many individuals who have contributed to the significant progress made to date.

On December 20, 2004, DoD became the first government agency to certify that it completed submission of its FY04 contract reporting data to the General Services Administration (GSA) for loading into FPDS-NG. Since DoD is the source for over 60 percent of contract reporting information for the entire federal government, this accomplishment signifies completion of a major milestone. Following the certification of other agencies, FPDS-NG <<https://www.fpds.gov>> was made available on December 27, 2004, to the public for queries and reports on government contract actions. Also during December, the first DoD contracting office, Fort Sill, began reporting FY05 transactions via the Standard Procurement System's (SPS') machine-to-machine interface with FPDS-NG. SPS provides contract reporting capability for the majority of our DoD contracting offices, and their timely completion of this important work positions us well for the next phase of the overall transition.

Although much transition work is complete, we continue to take a conservative approach. We are committed to ensuring the transition is handled in such a way as to minimize the impact on our people's ability to report timely and accurate information, as well as on the ability of the public and Congress to access that data. At this time, FPDS-NG's schedule to implement all the critical items necessary for DoD to complete migration to the machine-to-machine reporting environment extends further into the year than originally planned. Accordingly, I want to highlight for you several important issues and changes we are enacting to our transition schedule as a result.





First, the majority of DoD contracting activities will continue to use DD Form 350s to report contract actions greater than \$2,500 through FY05. Summary reporting DD Form 1057s will not be accepted for FY05 actions. DoD will use the feeder system infrastructure already in place and a similar migration process for loading its F05 data into FPDS-NG as that used for FY97-04. This allows DoD to maintain report generation capability through our Statistical Information Analysis Division (SIAD) (formerly the Directorate for Information Operations and Reports (DIOR)), while finetuning continues on FPDS-NG capabilities. Meanwhile, there will be a small number of contracting activities identified, with your concurrence, to transition to the machine-to-machine environment this fiscal year in order to monitor the capabilities offered.

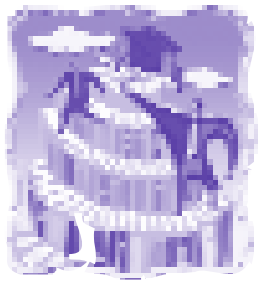
Second, it is essential that our contracting offices focus on eliminating any reporting backlog accumulated in FY05, as we are committed to making our data available to the public SIAD Web site within the next several weeks. However, it is equally important that the data being entered via the DD Form 3502 are accurate. Given the current operating environment is in transition, it becomes even more important to ensure DoD reports our contracting actions in a timely and accurate manner.

Finally, DoD contract writing systems are still required to complete the FPDS-NG interface certification process by February 1, 2005. SPS completed this process in October 2004. In my last update memo to you, I requested you submit a detailed contingency plan by December 17, 2004, if you anticipated any issue with successfully achieving this milestone. For those who have not responded, please notify my action officer, Lisa Romney, (703) 614-3883, lisa.romney@osd.mil, immediately.

I thank you for all for your continued cooperation, patience, and support in this very complex transition to the new federal system. Again, my action officer for FPDS-NG is Lisa Romney. If you have specific Component questions, please contact your designated DoD FPDS-NG Transition Team representative below:

- Department of Army and Other Defense Agencies: Brian Davidson, brian.davidson@hqda.army.mil, 703-681-9781
- Department of Navy—Patricia Coffey, patricia.coffey@navy.mil, 202-685-1279
- Department of Air Force—Kathryn Ekberg, kathryn.ekberg@pentagon.af.mil, 703-588-7033
- Defense Logistics Agency (DLA)—Judy Lee, judy.lee@dla.mil, 703-767-1376
- Defense Contracts Management Agency: Barbara Roberson, barbara.roberson@dcma.mil, 703-428-0856
- Standard Procurement System: Joyce Allen, joyce.allen@eis.army.mil, 703-460-1507

Deidre A. Lee
Director, Defense Procurement
and Acquisition Policy



Conferences, Workshops & Symposia

ARMY NEWS SERVICE (DEC. 16, 2004) **ARMY, INDUSTRY, ACADEMIA COLLABORATION BRINGS NEW TECHNOLOGY**

Steven Field

ORLANDO, Fla.—Alliances are as important in developing new technology as they are in sustaining positive diplomacy, an Army researcher said.

The Collaborative Technology Alliances sponsored by the U.S. Army Research Laboratory were on display to highlight the importance of cooperation in creating the soldier of the future at the Army Science Conference.

"The CTAs represent an excellent business model for leveraging the investments and talents of others in collaboration with Army scientists and engineers while increasing the likelihood that cutting-edge technology gets into the hands of our soldiers," said Dr. John Parmentola, Army director for research and laboratory management.

The five CTAs bring together Army, academic, and industry experts to accelerate the creation of new technology that is vital to the future force. By investing more than \$180 million between 2001 and 2006, the Army hopes to spur the development of robots, energy sources, sensors, decision architectures, and communication networks that will make the fighting force more effective.

Through partnerships, the Army expects to achieve the best results by taking advantage of the practicality of industry, the frontiers of research and technology through universities, and the ability of Army Research Laboratory to shape and transition the results for Army application.

"Each researcher is brilliant in his or her own right, but together the brilliance increases exponentially; it's a force multiplier," said Ginny Fite of General Dynamics Robotics, one of the collaborators in the Robotics CTA.

Each CTA has members from Army Research Laboratory, an industry lead, and members from academia, small businesses, and historically black colleges or other minority institutions.

"We are equal partners in a consortium—military, industry, and education," said Susan Archer of Micro Analy-

sis & Design, an industry member of the Advanced Decision Architectures CTA.

The Advanced Decision Architectures CTA focuses on understanding human behavior and adapting technology to conform to function most compatibly with human instincts, essentially creating technology that helps soldiers make better decisions.

"There is so much information and technology out there," Archer said. "We help the soldier pull a needle out of the information haystack."

The other four teams are the Power & Energy CTA, which seeks to increase the efficiency, mobility, and survivability of power generators used on the battlefield; the Communications & Networks CTA, which seeks to develop more secure, mobile, and lightweight modes of communicating on the battlefield; the Advanced Sensors CTA, which develops sensors that increase situational awareness; and the Robotics CTA, which is designing robot technology for unmanned missions that can keep soldiers out of dangerous situations.

Military, industry, and academia all have different things to offer, and all help the others in their mission, members of CTAs said. For example, academia receives concrete direction about the needs of the Army through direct communication with Army officials, so researchers are able to focus on practical military needs, said Dr. Stuart Jacobson of the Massachusetts Institute of Technology, who is a member of the Power & Energy CTA.

Industry then provides an outlet for manufacturing the new technologies developed on campus, he said.

Jacobson is designing a battery that uses internal combustion to make energy, allowing batteries to last four times longer.

A provision of the Collaborative Technology Alliances program allows the Army Research Laboratory to withhold up to 10 percent of the annual funding amount to fund parties external to the Collaborative Technology Alliances program for innovative research. Inquiries should be made to the collaborative alliance manager.

For more information about CTAs, visit www.arl.army.mil/alliances.



INTERNATIONAL TEST & EVALUATION ASSOCIATION (ITEA) 9TH ANNUAL TEST INSTRUMENTATION WORKSHOP (MAY 2-5, 2005)

The 9th Annual Test Instrumentation Workshop, hosted by the ITEA China Lake and Antelope Valley Chapters, will be held May 2-5, 2005, at the Kerr-McGee Center in Ridgecrest, Calif. The theme of the 2005 event will be "Test Instrumentation for the Full Product Life Cycle." For more information, call or e-mail Bettye Moody at (760) 939-7252, bettye.moody@navy.mil.

DEFENSE PROCUREMENT AND ACQUISITION POLICY, E-BUSINESS CONFERENCE (MAY 23-26, 2005)

The 2005 Defense Procurement and Acquisition Policy e-Business Conference will be held May 23-26, 2005, at the Rosen Centre in Orlando, Fla. Strategic acquisition through electronic systems is the future, and e-Business is leading the journey to achieve this ideal. Hosted by the Office of Defense Procurement and Acquisition Policy, e-Business (DPAP, EB), the e-Business Conference will focus on the approaches, strategies, and initiatives that will make this environment a reality. The conference will cover:

- **Enterprise Architecture**—a movement away from application silos
- **Portfolio Management**—an assessment of technical and functional capabilities supporting strategic acquisition
- **Transition Planning**—a plan to transform the acquisition domain from what is to what should be
- **Governance**—reflective of both procurement and acquisition processes and strategies.

Who should attend? Acquisition and procurement executives who oversee strategic plans and manage transformation policies. For details on registering, go to the DPAP Electronic Business Web site: <http://www.acq.osd.mil/dpap/ebiz/index.htm>.

NATIONAL SMALL BUSINESS INNOVATION RESEARCH (SBIR) PHASE II CONFERENCE & EXHIBITION (JULY 11-14, 2005) BEYOND PHASE II: READY FOR TRANSITION

The National SBIR PH II Conference will be held July 11-14, 2005, at the Sheraton Hotel and Marina in San Diego, Calif. This conference gives ac-

quisition professionals the chance to meet one on one with small high-tech firms that have innovative technologies. Don't miss this opportunity to learn about transitioning advanced SBIR research and development into your acquisition program

For more information on this event, check the SBIR Web site: <http://www.dodsbir.com/conference> or e-mail sbirconference@brtrc.com.

ACQUISITION SENIOR LEADERS' CONFERENCE

The Acquisition Senior Leaders' Conference is scheduled for Aug. 22-25, 2005, in Detroit, Mich. Watch the U.S. Army Acquisition Support Center Web site at http://asc.army.mil/events/conferences/2004/slc_geninfo.cfm for future updates and conference information.

2005 ANNUAL INTERNATIONAL TEST & EVALUATION ASSOCIATION (ITEA) INTERNATIONAL SYMPOSIUM (SEPT. 26-29, 2005)

The ITEA Symposium 2005 will be held Sept. 26-29, 2005, at the Albuquerque Convention Center in Albuquerque, N.M. This year's event will provide a forum for addressing the issue of transformational test and evaluation, examining the topic from three perspectives:

- **Programs** that are or will be testing in the Joint Force and Coalition Battlespace
- **Methodologies**, processes, resources, tools, and limitations that enable or hinder our testing in the Joint Force and Coalition Battlespace
- **Lessons Learned**, including recommendations for the way ahead.

For more information on this event, check the ITEA Web site: <http://www.itea.org> or call (703) 631-6220.

8TH ANNUAL SYSTEMS ENGINEERING CONFERENCE (OCT. 24-27, 2005)

The 8th Annual Systems Engineering Conference will be held Oct. 24-27, 2005, at the Hyatt Regency Islandia, San Diego, Calif. The call for papers and the conference announcement will be mailed and will be available at http://register.ndia.org/inter/view/register.ndia?PID=Brochure&SID=_1D00RC2RA&MID=6870. If you would like to add your information to the mailing list, please contact Phyllis Edmonson at (703) 247-2588 or pedmonson@ndia.org.



Acquisition & Logistics Excellence

ARMY NEWS SERVICE

(JAN. 18, 2005)

CODY THANKS WORKERS AT RED RIVER ARMY DEPOT

Staff Sgt. Reeba Critser, USA

TEXARKANA, Texas—Red River Army Depot is one of six sites producing armor survivability kits for high-mobility, multi-wheeled vehicles, and the Army's vice chief visited there Jan. 14 to thank employees.

The depot also recycles Humvees in a process called recapitalization, refurbishes heavy expanded mobility tactical trucks and is the Center of Industrial and Technical Excellence for tactical wheeled vehicles, small emplacement excavators, Bradley tanks, Patriot missile recertification, and rubber products in support of U.S. and allied forces.

With the war on terrorism and the demand for more, better-made vehicles, the employees at this depot work around the clock to meet the demands of commanders in theater.

"I want to thank this generation of workers," said Vice Chief of Staff Gen. Richard A. Cody to the media during his visit to the depot Jan. 14. "[At the Pentagon] you can't see the production rate without seeing the faces of these people working three shifts to get the job done. They have the right priorities and are producing high-quality products."

He shared stories from his November trip to Camp Arifjan, Kuwait.

"I saw the look on troops' faces as they got the add-on armor kits," Cody said. "It came from Red River Depot and they know that Red River cares about them."

While touring the facility, Cody met Joe Clayborn, who has put in seven years of service at the depot. Clayborn, a Vietnam War veteran, has a son in the 502nd Regi-



Vice Chief of Staff Gen. Richard A. Cody (right) gets a tour of the Bradley manufacturing division at Red River Army Depot, Texarkana, Texas, Jan. 14.

Photograph by Staff Sgt. Reeba Critser, USA

ment at Fort Campbell, Ky., who recently returned from a deployment to Operation Iraqi Freedom.

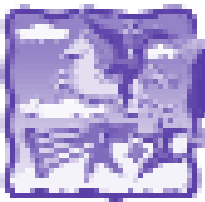
"[Clayborn] knows his son is safe," Cody told the employees of Red River Army Depot. "But he also knows that there are soldiers still on the line depending on him and all of you to produce the best products."

Sean Perry, another Army veteran who works at the depot as a grade eight mechanic, agrees with Cody.

"Everything we do here affects the soldier when in war and when not in war," Perry said. "What we do here makes [the soldiers] do their job properly."

The Red River Army Depot is the Army's only road wheel and track-shoe rebuild and manufacture facility, and it's the Defense Department's only facility to recertify Patriot and Hawk missile systems.

"The most important thing for combat commanders in the fight is not to stop," said depot commander Col. Michael Cervone. "With reliable equipment in the field, the commander won't have to stop. There is no greater risk than faulty equipment."



Acquisition & Logistics Excellence

Teams from Red River Army Depot set up a mini depot in Kuwait when Operation Iraqi Freedom began, giving soldiers a quick turn-around in repairs.

"It's more than a paycheck for these workers," Cody told the media in a press conference at the depot. "They know every minute counts. They know that everything they're building here is saving lives."

Crister is assigned to the Office of the Chief of Public Affairs, Red River Army Depot, Texarkana, Texas.

DEPARTMENT OF NAVY NEWS RELEASE (DEC. 21, 2004) **NAVY'S ENERGY PROGRAM RECEIVES INDUSTRY LEADERSHIP AWARD**

The Department of Navy (DoN) became the first U.S. government agency honored with a Platts Global Energy Award, which recognizes the energy industry's best of the best, during a Dec. 10 ceremony in New York City. The DoN's energy program was presented with the Industry Leadership Award for its extraordinary leadership and achievement in energy management.

William Tayler, director, DoN Shore Energy Office, accepted the award for the Navy. "On behalf of the secretary of Navy and the hard working Navy and Marine Corps Energy Team, I thank Platts and the judges for this award," said Tayler. "Being the first federal agency to receive this honor really underscores our team's commitment to conservation and being good stewards of the environment."

The Platts Global Energy Awards recognized the Navy for its energy reduction milestones and declining greenhouse gas and indirect nitrous oxide emissions. DoN's energy program has instituted technologies, programs, and awareness campaigns that significantly reduced energy consumption by worldwide Navy and Marine Corps installations, saving taxpayers more than \$500 million each year.

The Navy's worldwide energy program is managed by the Naval Facilities Engineering Command. The program includes state-of-the-art technology and design, the most energy-efficient products, and a focus on individual contributions toward improved conservation and operations and maintenance strategies.

Nearly 200 nominations were submitted. An international panel of judges, including top corporate execu-

tives, leading academics, and senior analysts evaluated each entry within its category as well as its context within the energy industry.

For more information, visit the Navy's energy program at [<https://energy.navy.mil/ >](https://energy.navy.mil/).

AMERICAN GRADUATE UNIVERSITY NAMES THOMAS SCHEETZ 2004 STUDENT OF THE YEAR (JAN. 3, 2005)

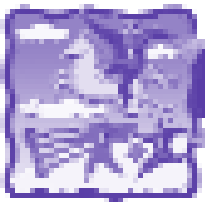
COVINA, Calif. —A U.S. Air Force contracting specialist who completed his master's degree in acquisition management in half the time it takes most graduate students, and whose GPA was a perfect 4.0, has won the 2004 Student of the Year Award from American Graduate University. The prize is awarded annually to the graduate whose academic accomplishment rises well above that of other high performing students in the same graduating class. This year's honoree is Thomas Scheetz, a procurement analyst at Shriever Air Force Base in Colorado.

"Tom's score on the program comprehensive examination was the highest ever achieved," said Mark Ferguson, president of American Graduate University. "And his grade point average was a perfect 4.0, which is all the more impressive because he completed the master of acquisition management degree program in a little over a year. The average time for completion is 24 months."

AGU's master of acquisition management program is one of three fully accredited graduate degrees offered to rising professionals in government and industry in a distance-learning format. The M.A.M. is highly sought after by contracting officers, financial analysts, and negotiators in the federal government procurement system. AGU also offers the master of contract management and the master of project management.

Scheetz recently ended a 30-year military career in the Air Force and continued his career as a civilian Air Force procurement analyst. A native of Sidney, Mont., Scheetz enlisted in the Air Force right after graduating from high school in 1974. He retired from the military last August as a chief master sergeant. During his tenure in the Air Force, Scheetz traveled to 48 states and 39 foreign countries.

Scheetz will be honored as AGU's 2004 Student of the Year at a national ceremony sponsored by the Distance Education & Training Council this spring.



ACQUISITION MANAGEMENT POLICY DIVISION, OFFICE OF THE SECRETARY OF THE AIR FORCE (ACQUISITION) CORPORATE INNOVATORS FOR 2004

Grant Cole

The Product Development & Management Association (PDMA) named the Air Force Research Laboratory (AFRL), Wright-Patterson AFB, Ohio, as one of two Outstanding Corporate Innovators for 2004 during PDMA's 28th Annual International Conference. This year's conference was held in Chicago on Oct. 26, 2004. The AFRL was selected from a field of over 20 global candidates nominated by PDMA members.

The award is meant to recognize and showcase organizations that have demonstrated an enterprise-wide commitment to innovation and have proved themselves to be highly successful in the continuous development of profitable new products. It also provides a significant learning vehicle for the new product development community by having the recipients share their award-winning practices.

This award once again highlights AFRL's commitment to providing technology solutions to the Air Force's air, space, weapons, information, and maintenance systems. Their work has a long history of advances that have both military and commercial applications.

Not content to rest on its record of past successes, and in response to Air Force goals to field technology faster and more affordably, AFRL undertook a remarkable transformation of their new product development efforts. They radically re-engineered their development process from a focus on advancing individual technology disciplines, to one focused on meeting today's customer needs, as well as anticipating latent needs 10 to 20 years in the future.

The current process actively involves customers in the planning, production, and deployment of products. Total end-use requirements, such as serviceability, receive much more attention as a result of the transformation. "Technology Roadmaps" and "Capability Planning" sub-processes are used to fuel innovation, capture needs, and synchronize developments/deployment schedules.

Editor's Note: Thirty-one firms have been recognized as Outstanding Corporate Innovators since the inception of the award. Past recipients have included Apple, BMW, Eastman Kodak, Harley-Davidson, Hewlett-Packard, Nabisco, and Pepsi-Cola.

DEPARTMENT OF DEFENSE NEWS RELEASE (FEB. 7, 2005)

CHIEF OF NAVAL OPERATIONS ENVIRONMENTAL AWARD WINNERS NAMED

Twenty-eight winners have been selected in the 2004 Chief of Naval Operations Environmental Awards competition, sponsored by the CNO Environmental Readiness Division.

The annual program recognizes Navy individuals, teams, ships, and installations for their exceptional environmental stewardship. Competition categories include natural resources conservation, cultural resources management, environmental quality, pollution prevention, environmental restoration, and environmental planning.

Awards will be presented May 3, 2005, at the U.S. Navy Memorial and Naval Heritage Center in Washington, D.C. The 2004 winners are:

Natural Resources Conservation Large Installation Award

- Naval Air Station Fallon, Nev.
- Naval Base Coronado, Calif.
- Naval Weapons Station, Charleston, S.C.

Cultural Resources Management Installation Award

- Naval Base Coronado, Calif.
- Naval Base Kitsap at Bremerton, Wash.
- Portsmouth Naval Shipyard, N.H.

Cultural Resources Management Individual or Team Award

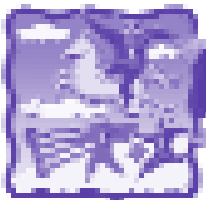
- John A. Cordray Jr., Southern Division, Naval Facilities Engineering Command, Charleston, S.C.
- William R. Manley, Navy Region Southwest, San Diego, Calif.
- James V. Sartain, Naval Support Activity Panama City, Fla.

Environmental Quality Industrial Installation Award

- Naval Air Depot Cherry Point, N.C.
- Pearl Harbor Naval Shipyard and Intermediate Maintenance Facility, Hawaii
- Puget Sound Naval Shipyard and Intermediate Maintenance Facility, Wash.

Environmental Quality Overseas Installation Award

- U.S. Fleet Activities Sasebo, Japan
- U.S. Naval Air Facility Atsugi, Japan
- U.S. Naval Support Activity Bahrain



Environmental Quality Small Ship Award

- *USS Champion*, MCM Crew DELTA, Ingleside, Texas
- *USS McClusky*, San Diego, Calif.
- *USS O'Kane*, Pearl Harbor, Hawaii

Pollution Prevention Non-Industrial Installation Award

- Commander, Navy Region Mid-Atlantic, Norfolk, Va.
- Naval Air Station Lemoore, Calif.
- Naval Air Station Whidbey Island, Wash.

Pollution Prevention Individual or Team Award

- Naval Air Station Whidbey Island Pollution Prevention Team, Wash.
- Navy Region Northwest Spill Prevention and Response Team, Wash.
- *USS Salvor* Pollution Prevention Team, Pearl Harbor, Hawaii

Environmental Restoration Installation Award

- Naval Facilities Engineering Command Pacific, Hawaii
- Naval Magazine Indian Island, Wash.
- Norfolk Naval Shipyard, Va.

Environmental Planning Team Award

- Fleet Forces Command Environmental Planning Team, Norfolk, Va.

For more information about the 2004 CNO Environmental Awards competition, contact Easter Thompson at Easter.R.Thompson@navy.mil.

DEPARTMENT OF DEFENSE NEWS RELEASE (FEB. 18, 2005)

DOD AWARDS \$43.9 MILLION TO UNIVERSITIES FOR RESEARCH EQUIPMENT

The Department of Defense today announced plans to award \$43.9 million to academic institutions to support the purchase of research instrumentation. The awards are being made under the Defense University Research Instrumentation Program (DURIP).

The 212 awards to 108 academic institutions are expected to range from about \$60,000 to \$990,000 and average \$207,000. DURIP supports the purchase of state-of-the-art equipment that augments current university capabilities or develops new university capabilities to perform cutting-edge defense research. DURIP meets a critical need by enabling university researchers to purchase scientific equipment costing \$50,000 or more to conduct DoD-relevant research. The researchers generally have difficulty purchasing instruments costing that much under their research contracts and grants.

All awards are subject to the successful completion of negotiations between DoD research offices and the academic institutions.

This announcement is the result of a merit competition for DURIP funding conducted by the Army Research Office, Office of Naval Research, and Air Force Office of Scientific Research. Each office requested proposals from university investigators working in areas of importance to DoD, such as information technology, remote sensing, propulsion, electronics and electro-optics, advanced materials, and ocean science and engineering. In response to the requests, the research offices collectively received 932 proposals, requesting \$253 million in support for research equipment.

Access the complete list of winning proposers at <http://www.defenselink.mil/news/Feb2005/d20050218support.pdf>.

ACQUISITION BRANCH/DIVISION CHIEFS, DEPUTY DIRECTORS, DIRECTORS, DEPUTY PROGRAM MANAGERS, PRODUCT MANAGERS, AND PROJECT MANAGERS.

The U.S. Army Acquisition Support Center, under the direction of Col. Genaro J. Dellarocco, is proud to recognize the competitive selection and assignment slating of Competitive Development Group (CDG) Year Group 2005 selectees.

Competitive Development Group	1st Year Development Assignment
Garry Appel	Joint PM Chem/Bio Defense
Larry Bradley	OASA (ALT)
Barbara Brown	Space and Missile Defense
Craig Burow	PEO AVN
Bruce Dahm	PEO Soldier
John Davis	PEO Soldier
Marcos Gonzalez	OASA (ALT)
Marian Guidry	Joint Project Office Ground Mid Course Defense
William Jones	OASA (ALT)
Jean Kampschroeder	Communications-Electronics Command
Victor Krepackcki	Science Training Technology Center, Applied Research Programs
David Marck	Space and Missile Defense
Norma McKayan	PEO Soldier
Peggy Schmoll	PEO AVN
Karen Waterford	Ground Mid Course Defense

(Ance! Hodges/ASC/DSN 655-1234/ance!.hodges@us.army.mil)



AT&L Workforce— Key Leadership Changes

SECRETARY OF THE AIR FORCE, DIRECTORATE OF PUBLIC AFFAIRS NEWS RELEASE (JAN. 28, 2005) **NEW PROGRAM OFFICE ESTABLISHED IN WASHINGTON D.C. AREA**

WASHINGTON—The Air Force today announces a change to the structure and focus of the Space Radar Program Office to increase collaboration with stakeholders from both the Department of Defense and Intelligence communities on a future Space Radar (SR) program.

Brig. Gen. John "Tom" Sheridan has been named program executive officer and system program director, Space Radar Program, and will lead this SR program office from the Washington D.C. area. The radar satellite demonstrator to be launched in fiscal 2008 will mature technologies that are necessary for the program. This demonstration will validate SR costs and technology maturity as well as demonstrate the concept of operations and user utility.

"This is the right thing to do. The new program structure will improve stakeholder interaction allowing us to better meet the needs of both the warfighter and intelligence communities," said Peter B. Teets, acting secretary of the Air Force and director of the National Reconnaissance Office in his capacity as the DoD Executive Agent for Space.

This radar in space will provide denied area, all weather, day and night surveillance and reconnaissance capabilities required by the national intelligence and joint warfighter communities. Specifically, a modern multifunctional radar will host a range of capabilities including synthetic aperture radar imagery, high resolution terrain information, advanced geospatial intelligence, and surface moving target indication. The SR program seeks to provide these important capabilities to the nation.

GLASOW ASSUMES DIRECTORSHIP OF DMSO

Armey Col. Jerry Glasow assumed the directorship of the Defense Modeling and Simulation Office on Jan. 7 from Air Force Col. Michael L. Finner. Glasow had served as the DMSO deputy director for requirements since July 19, 2004. Finner, who had served as the director since March 1, 2003, retired in January.

Prior to his assignment at DMSO Glasow, a chemical branch officer, served as the military assistant for weapons of mass destruction and chemical weapons demilitarization to the deputy under secretary of the Army for operations research. "My vision for DMSO is overcoming barriers to modeling and simulation interoperability and fostering M&S capabilities useful to multiple communities," Glasow said. "We will leverage the recent energization of M&S within the training, analysis, acquisition, and test and evaluation communities in concert with the Joint Capabilities Integration and Development System and the Network Centric Operations Industry Consortium."

Glasow's earlier assignments include munitions requirements analyst and nuclear, biological, and chemical warfare analysis reviewer at the U.S. Army Center for Army Analysis; and modeling and simulation special assistant to the deputy assistant to the secretary of defense for chemical and biological defense. Glasow entered the Army in May 1982 upon graduating from Texas A&M University as a distinguished military graduate with a bachelor's degree in chemical engineering. He is also a graduate of the chemical officer basic and advanced courses at the U.S. Army Chemical School; the Naval Postgraduate School, where he received a master's degree in operations research; and the Industrial College of the Armed Forces at the National Defense University, where he received a master's degree in strategic resource management.

For further information, contact Sherrel W. Mock, smock@dmsomil.

PENTAGON'S FORCE TRANSFORMATION DIRECTOR TO RETIRE

The Pentagon announced Jan. 19 that the Department of Defense Force Transformation Director Arthur Cebrowski, who has influenced thinking and helped shape policy on how to prepare for future military challenges, would retire at the end of January 2005 due to health concerns. Cebrowski, a retired Navy vice admiral, informed Defense Secretary Donald Rumsfeld weeks earlier of his decision to step down on Jan. 31, said Rob Holzer, spokesman for the Office of Force Transformation.

Terry Pudas, the office's deputy director, temporarily heads the office until a replacement is found.



DEPARTMENT OF DEFENSE NEWS RELEASE (FEB. 8, 2005)

DOD APPOINTS NEW DIRECTOR OF DEFENSE THREAT REDUCTION AGENCY

The Department of Defense announced today the appointment of James A. Tegnella as the new director, Defense Threat Reduction Agency.

Assistant to the Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs Dale Klein said, “The appointment of Jim Tegnella as the director of DTRA is another significant step in transforming how we defend against the threat of weapons of mass destruction. He brings exceptional talent, skills, and management experience to this new role and responsibility.”

DTRA is a Department of Defense combat support agency with an annual budget of more than \$2.6 billion and a military/civilian workforce of approximately 1,890. DTRA focuses on reducing the threat of weapons of mass destruction through a combination of advanced technology programs and innovative operational methods. Several technologies developed at DTRA have made significant impact in Afghanistan and Iraq. DTRA also has an integral role in several international WMD-related treaty verification programs.

Tegnella is currently the vice president, Department of Defense programs at Sandia National Laboratories, Albuquerque, N.M. Under his leadership, this program has experienced an unprecedented growth of 147 percent in the past four years to a budget topping \$183 million. Tegnella also served as chairman of the Army Science Board and as co-chair of the Sandia National Security Advisory Panel. He was a member of the board of directors of the Sandia Technology Park and a member of the National Advisory Panel of The George Washington University School of Engineering.

Tegnella earned his bachelor’s degree in physics from Georgetown University, a master’s degree in engineering from The George Washington University, and a doctorate in physics from The Catholic University of America. He served in the Army from 1968 to 1971 and was awarded the Bronze Star during a one-year tour of duty in Vietnam.

DTRA headquarters is located at Fort Belvoir, Va. The agency operates field offices in Alexandria, Va.; Albuquerque, N.M.; and San Francisco, Calif. Overseas locations include Darmstadt, Germany; London, United King-

dom; Almaty, Kazakhstan; Tashkent, Uzbekistan; Moscow and Votkinsk, Russia; Kiev, Ukraine; and Yokota, Japan.

FORT MONMOUTH SITE FOR ARMY’S NEW LIFE-CYCLE MANAGEMENT COMMAND (FEB. 2, 2005)

Arry officials at Fort Monmouth, N.J., announced Feb. 2 the creation of a new Communications-Electronics Life Cycle Management Command (C-E LCMC). The new organization was restructured from three organizations—CECOM, the PEO for C3T, and the PEO for intelligence, electronic warfare, and sensors—and reflects the Army’s desire to improve how equipment is provided to warfighters.

“Our personnel will be able to more effectively provide command and control, communications, computers, intelligence, surveillance and reconnaissance tools to the warfighter that are highly developed, sustainable, reliable, usable, and abreast of current technology” Mazzucchi said.

Mazzucchi, who became the the commanding general of CECOM in June 2004, will continue to report to the commander of Army Materiel Command. Victor Ferlise, the former deputy to the commanding general of CECOM, has been designated the deputy to the commanding general for operations and support.

REDSTONE ROCKET (JAN. 20, 2005) BRIG. GEN. MIKE CANNON LEADS COMBINED ORGANIZATION

Pam Rogers

Two of Team Redstone’s program executive offices were merged to form a new office during a recent ceremony in Bob Jones Auditorium at Redstone Arsenal, Ala. Both the PEO for Air, Space and Missile Defense (ASMD) and the PEO for Tactical Missiles were deactivated and a new office, the PEO for Missiles and Space, was activated. [Army Brig. Gen. Mike Cannon](#) was designated as the program executive officer. He formerly served as PEO for Tactical Missiles. Lt. Gen. Joseph Yakovac, military deputy to the assistant secretary of the Army for acquisition, logistics and technology, officiated at the ceremony.

Yakovac pointed out it was the right thing to do. “I know this is hard, but the leadership determined that we’re better off to accomplish the future mission,” he said, adding that the PEO for Tactical Missiles came from two PEOs—the PEOs for Fire Support and Combat Missiles.



AT&L Workforce—Key Leadership Changes

Army Maj. Gen. John Urias, who served as the PEO for air, space and missile defense since 1999, has been named commander of the Joint Contracting Command-Iraq and head of the Contracting Authority. Urias praised the efforts of the workers in PEO ASMD, saying he relished even the bad days, because of “all the people who stepped up to the plate. I had superb project managers who rose above bureaucracy and inefficiency and pushed the old Cold War envelope, getting weapons to soldiers faster,” he said.

Both PEOs had been in existence at Redstone in one form or another since 1992. The PEO for ASMD began as the PEO for Global Protection Against Limited Strikes. It was renamed the PEO for Missile Defense in 1993, and the name was changed to PEO for Air and Missile Defense in 1996. The latest change came in 2003 with the addition of the Army’s space programs and the name was changed to PEO for Air, Space and Missile Defense.

The PEO for Tactical Missiles was formed from the PEOs for Fire Support and Close Combat Missiles and is composed of four project offices: Aviation Rockets and Missiles, Close Combat Weapon Systems, Precision Fires Rocket and Missile Systems and Joint Common Missile; and the Non-Line of Sight Launch System Task Force.

Cannon, the new PEO for missiles and space, informed his workers they now have a chance to prove the assertions that have been made recently that the PEOs are life cycle managers.

“We will soon be handed the keys to a new kingdom,” to prove the life cycle mission,” he said.

ARMY NEWS SERVICE (MARCH 8, 2005) DUBOIS SWORN IN AS ACTING UNDER SECRETARY OF THE ARMY

Raymond F. DuBois was sworn in today as the acting under secretary of the Army. As the under secretary, DuBois serves as Secretary of the Army Dr. Francis J. Harvey’s senior civilian advisor and carries out those responsibilities and functions specifically delegated by the secretary. Among his numerous responsibilities, he advises and assists the secretary concerning the secretariat functions of auditing, inspector general, legislative affairs, and public affairs activities. In addition, DuBois exercises oversight responsibility for the civil works function and the management of Army installations and facilities. He also provides oversight of policy, planning, coordination, and execution of matters related to man-

power and personnel; logistics; installations; operations and plans; requirements and programs; intelligence; command, control, and communications; and readiness.

Prior to his appointment to this position by President George W. Bush, DuBois served concurrently as the deputy under secretary of defense for installations and environment and as the director of administration and management, Office of the Secretary of Defense.

“I asked Secretary Rumsfeld to reassign Ray to the Army because Ray has extensive experience within the Department of Defense and has demonstrated ability to get the right things done at the right time,” said Harvey. “He will be a tremendous asset to the Army.”

DuBois, a graduate of Princeton University, served in the U.S. Army from 1967 to 1969, including nearly 13-months in Vietnam as a combat intelligence operations sergeant in the central highlands.

DEPARTMENT OF DEFENSE NEWS RELEASE (FEB. 16, 2005) FLAG OFFICER ANNOUNCEMENTS

Secretary of Defense Donald H. Rumsfeld announced today that the president has made the following nominations:

Navy Capt. Mark F. Heinrich has been nominated for appointment to the rank of rear admiral (lower half). Heinrich is currently serving as assistant chief of staff for Force Supply, N41, Naval Surface Force, U.S. Pacific Fleet, San Diego, Calif.

Navy Capt. Charles M. Lilli has been nominated for appointment to the rank of rear admiral (lower half). Lilli is currently serving as chief of staff, Naval Supply Systems Command, Mechanicsburg, Pa.

COYLE RECOMMENDED TO SERVE ON BRAC COMMISSION (FEB. 17, 2005)

House Democratic Leader Nancy Pelosi has announced that she has recommended Philip E. Coyle III of Los Angeles to President Bush for nomination to the Base Realignment and Closure (BRAC) Commission. Coyle is a former assistant secretary of defense and director of operational test and evaluation in the Department of Defense from 1994 to 2001. He is an expert on missile defense systems and oversaw the testing and evaluation of more than 200 defense acquisition systems.



AT&L Workforce—Key Leadership Changes

DEPARTMENT OF DEFENSE NEWS RELEASE (FEB. 16, 2005)

FLAG OFFICER ANNOUNCEMENT

Secretary of Defense Donald H. Rumsfeld announced today that the president has made the following nomination:

Naval Capt. Charles M. Lilli has been nominated for appointment to the rank of rear admiral (lower half). Lilli is currently serving as chief of staff, Naval Supply Systems Command, Mechanicsburg, Pa.

DEPARTMENT OF DEFENSE NEWS RELEASE (MARCH 1, 2005)

FLAG OFFICER ANNOUNCEMENT

Chief of Naval Operations Adm. Vern Clark announced the following flag officer assignment:

Rear Adm. (lower half) Michael C. Bachmann is being assigned as vice commander, Naval Air Systems Command, Patuxent River, Md. Bachmann is currently assistant commander for logistics, Air 3.0, Naval Air Systems Command, Patuxent River, Md.

Rear Adm. (lower half) Peter J. Williams is being assigned as assistant commander for logistics, Air 3.0, Naval Air Systems Command, Patuxent River, Md. Williams is currently assistant commander for aviation depots, Air 6.0, Naval Air Systems Command, Patuxent River, Md.

AIR FORCE PRINT NEWS (MARCH 15, 2005)

OFFICIALS ANNOUNCE INTERIM ACQUISITION EXECUTIVE

Master Sgt. David Byron, USAF

WASHINGTON—Peter B. Teets, acting secretary of the Air Force, has named a new interim member to the Air Force acquisition and management community's leadership team.

Timothy A. Beyland has been assigned, on an interim basis, as the principal deputy assistant secretary of the Air Force for acquisition and management.

He has also been delegated the authority to carry out all nonspace-related acquisition and procurement duties of the assistant secretary of the Air Force for acquisition.

Beyland will serve in the interim position until the position is filled or the secretary or acting secretary of the Air Force directs otherwise.

Before his new duties, Beyland served as director of the Air Force Personnel Operations Agency and at the plans and integration division for the Air Force deputy chief of staff for personnel. He entered federal service in 1981.

DEPARTMENT OF DEFENSE NEWS RELEASE (MARCH 18, 2005)

PETER B. TEETS ANNOUNCES DEPARTURE

Peter B. Teets announced his resignation today as acting secretary of the Air Force and director, National Reconnaissance Office effective March 25. Teets came to the Air Force in December 2001 from private industry.

"Pete Teets has handled challenging assignments during an important period in history, said Secretary of Defense Donald Rumsfeld. "I thank him for his service to the department and the country and wish him and his family the best."

Teets said, "It has been a distinct honor to serve in President Bush's administration with a talented national security team, specifically with the terrific men and women of America's Air Force and the National Reconnaissance Office. I'm confident we've strengthened the world's greatest Air Force to continue providing air and space dominance for the 21st century."

DEPARTMENT OF DEFENSE NEWS RELEASE (MARCH 18, 2005)

FLAG OFFICER ANNOUNCEMENTS

Secretary of Defense Donald H. Rumsfeld announced today that the president has made the following nominations:

Naval Reserve Rear Adm. (lower half) Raymond K. Alexander has been nominated for appointment to the grade of rear admiral. Alexander is currently serving as deputy commander, First Naval Construction Division, Little Creek, Va.

Naval Reserve Rear Adm. (lower half) Hugo G. Blackwood has been nominated for appointment to the grade of rear admiral. Blackwood is currently serving as deputy commander, Military Sealift Command, Atlantic/Pacific/Europe, Washington, D.C.

Naval Reserve Rear Adm. (lower half) Henry B. Tomlin III has been nominated for appointment to the grade of rear admiral. Tomlin is currently serving as commander, Naval Expeditionary Logistics Force, Williamsburg, Va.

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DAU also offers fee-for-service consulting and research programs.





Acquisition & Logistics Excellence

An Internet Listing Tailored to the Professional Acquisition Workforce

Surfing the Net

Acquisition Community Connection (ACC)

<http://acc.dau.mil>

Policies, procedures, tools, references, publications, Web links, and lessons learned for risk management, contracting, system engineering, total ownership cost (TOC).

Acquisition Reform Network (AcqNet)

<http://www.arnet.gov/>

Virtual library; federal acquisition and procurement opportunities; best practices; electronic forums; business opportunities; acquisition training; excluded parties list.

Advanced Concept Technology Demonstrations (ACTDs)

<http://www.acq.osd.mil/actd/>

ACTD's accomplishments, articles, speeches, guidelines, and points of contact.

Aging Systems Sustainment and Enabling Technologies (ASSET)

<http://catt.bus.okstate.edu/asset/index.html>

A government-academic-industry partnership. Technologies and processes developed in the ASSET program increase the DoD supply base, reduce time and cost associated with parts procurement, and enhance military readiness.

Air Force (Acquisition)

<http://www.safaq.hq.af.mil/>

Policy; career development and training opportunities; reducing TOC; library; links.

Air Force Materiel Command (AFMC) Contracting Laboratory's FAR Site

<http://farsite.hill.af.mil/>

FAR search tool; Commerce Business Daily announcements (CBDNet); Federal Register; electronic forms library.

Army Acquisition Support Center

<http://asc.army.mil>

News; policy; Army AL&T Magazine; programs; career information; events; training opportunities.

Assistant Secretary of the Army (Acquisition, Logistics & Technology)

<https://webportal.saaft.army.mil/>

ACAT Listing; ASA(ALT) Bulletin; digital documents library; ASA(ALT) organization; links to other Army acquisition sites.

Association of Old Crows (AOC)

<http://www.crows.org>

Association news; conventions, conferences, courses; Journal of Electronic Defense.

Commerce Business Daily

<http://cbdnet.gpo.gov>

Access to current and back issues with search capabilities; business opportunities; interactive yellow pages.

Committee for Purchase from People Who are Blind or Severely Disabled

<http://www.jwod.gov>

Information and guidance to federal customers on the requirements of the Javits-Wagner-O'Day (JWOD) Act.

Defense Acquisition University (DAU)

<http://www.dau.mil>

DAU Course Catalog; Defense AT&L magazine and Defense Acquisition Review journal; course schedule; policy documents; guidebooks; and training and education news for the Defense Acquisition Workforce.

DAU Alumni Association

<http://www.dauaa.org>

Acquisition tools and resources; government and related links; career opportunities; member forums.

DAU Distance Learning Courses

<http://www.dau.mil/registrar/apply.asp>

Take DAU courses online at your desk, at home, at your convenience.

Defense Advanced Research Projects Agency (DARPA)

<http://www.darpa.mil>

News releases; current solicitations; "Doing Business with DARPA."

Defense Electronic Business Program Office (DEBPO)

<http://www.acq.osd.mil/dpap/ebiz>

Policy; newsletters; Central Contractor Registration (CCR); assistance centers; DoD EC partners.

Defense Information Systems Agency (DISA)

<http://www.disa.mil>

Structure and mission of DISA; Defense Information System Network; Defense Message System; Global Command and Control System.

Defense Modeling and Simulation Office (DMSO)

<http://www.dmsomil>

DoD Modeling and Simulation Master Plan; document library; events; services.

Defense Systems Management College (DSMC)

<http://www.dau.mil>

DSMC educational products and services; course schedules; job opportunities.

Defense Technical Information Center (DTIC)

<http://www.dtic.mil/>

DTIC's scientific and technical information network (STINET) is one of DoD's largest available repositories of scientific, research, and engineering information. Hosts over 100 DoD Web sites. Register for services.

Deputy Director, Systems Engineering, USD(AT&L/IO/SE)

<http://www.acq.osd.mil/io/se/index.htm>

Systems engineering mission; Defense Acquisition Workforce Improvement Act information, training, and related sites; information on key areas of systems engineering responsibility.

Director, Defense Procurement and Acquisition Policy (DPAP)

<http://www.acq.osd.mil/dpap>

Procurement and acquisition policy news and events; reference library; DPAP organizational breakout; acquisition education and training policy and guidance.

DoD Defense Standardization Program

<http://www.dsp.dla.mil>

All about DoD standardization; key Points of Contact; FAQs; Military Specifications and Standards Reform; newsletters; training; nongovernment standards; links to related sites.

DoD Enterprise Software Initiative (ESI)

<http://www.donimit.navy.mil/esi>

Joint project to implement true software enterprise management process within DoD.

DoD Inspector General Publications

<http://www.dodig.osd.mil/pubs/index.html>

Audit and evaluation reports; IG testimony; planned and ongoing audit projects of interest to the acquisition community.

DoD Office of Technology Transition

<http://www.dtic.mil/ott/>

Information about and links to OTT's programs.

Dual Use Science & Technology (DUS&T) Program

<http://www.dtic.mil/dust>

Fact sheet; project information, guidance, and success stories.

Earned Value Management

<http://www.acq.osd.mil/pm>

Implementation of Earned Value Management; latest policy changes;

standards; international developments; active notebook.

Electronic Industries Alliance (EIA)

<http://www.eia.org>

Government relations department; includes links to issue councils; market research assistance.

Federal Acquisition Institute (FAI)

<http://www.faionline.com>

Virtual campus for learning opportunities; information access and performance support.

Federal Acquisition Jump Station

<http://prod.nais.nasa.gov/pub/fed-proc/home.html>

Procurement and acquisition servers by contracting activity; CBDNet; reference library.

Federal Aviation Administration (FAA)

<http://www.asu.faa.gov>

Online policy and guidance for all aspects of the acquisition process.

Federal Government Technology Transfer Links

<http://dtica.dtic.mil/t2/orgt2.html>

Manpower and Training Research Information System (MATRIS) project offers links to federal government tech transfer programs.

Federal R&D Project Summaries

<http://www.osti.gov/fedrnd/about.html>

Portal to information on federal research projects; search databases at different agencies.

Federal Research in Progress (FREDIP)

<http://grc.ntis.gov/fredip.htm>

Information on federally funded projects in the physical sciences, engineering, and life sciences.

Fedworld Information

<http://www.fedworld.gov>

Comprehensive central access point for searching, locating, ordering, and acquiring government and business information.

Government Accountability Office (GAO)

<http://www.gao.gov>

GAO reports; policy and guidance; FAQs.

General Services Administration (GSA)

<http://www.gsa.gov>

Online shopping for commercial items to support government interests.

Government-Industry Data Exchange Program (GIDEP)

<http://www.gidep.org/>

Federally funded co-op of government-industry participants, providing electronic forum to exchange technical information



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essential to research, design, development, production, and operational phases of the life cycle of systems, facilities, and equipment.

GOV.Research_Center

<http://grc.ntis.gov>

U.S. Dept. of Commerce, National Technical Information Service (NTIS), and National Information Services Corporation (NISC) joint venture single-point access to government information.

Integrated Dual-Use Commercial Companies (IDCC)

<http://www.idcc.org>

Information for technology-rich commercial companies on doing business with the federal government.

International Society of Logistics

<http://www.sole.org>

Online desk references that link to logistics problem-solving advice; Certified Professional Logistician certification.

International Test & Evaluation Association (ITEA)

<http://www.itea.org>

Professional association to further development and application of T&E policy and techniques to assess effectiveness, reliability, and safety of new and existing systems and products.

Joint Experimentation (JE) Program

<http://www.jfcom.mil/about/experiment.html>

The U.S. Joint Forces Command (USJFCOM)'s JE campaign plans support improvements in doctrine, interoperability, and integration for more effective use of military forces.

Joint Interoperability Test Command (JITC)

<http://jtc.fhu.disa.mil>

Policies and procedures for interoperability certification; lessons learned; support.

Joint Spectrum Center (JSC)

<http://www.jsc.mil>

Provides operational spectrum management support to the Joint Staff and COCOMs and conducts R&D into spectrum-efficient technologies.

Library of Congress

<http://www.loc.gov>

Research services; Congress at Work; Copyright Office; FAQs.

MANPRINT (Manpower and Personnel Integration)

<http://www.manprint.army.mil>

Points of contact for program managers; relevant regulations; policy letters from the Army Acquisition Executive; briefings on the MANPRINT program.

National Aeronautics and Space Administration (NASA)'s Commercial Technology Office (CTO)

<http://technology.grc.nasa.gov>

Promotes competitiveness of U.S. industry through commercial use of NASA technologies and expertise.

National Contract Management Association (NCMA)

<http://www.ncmahq.org>

"What's New in Contracting?"; educational products catalog; career center.

National Defense Industrial Association (NDIA)

<http://www.ndia.org>

Association news; events; government policy; National Defense magazine.

National Geospatial-Intelligence Agency

<http://www.nima.mil>

Imagery; maps and geodata; Freedom of Information Act resources; publications.

National Institute of Standards and Technology (NIST)

<http://www.nist.gov>

Information about NIST technology, measurements, and standards programs, products, and services.

National Technical Information Service (NTIS)

<http://www.ntis.gov/>

Online service for purchasing technical reports, computer products, videotapes, audiocassettes.

Naval Sea Systems Command

<http://www.navsea.navy.mil>

Total Ownership Cost (TOC); documentation and policy; reduction plan; implementation timeline; TOC reporting templates; FAQs.

Navy Acquisition and Business Management

<http://www.abm.rda.hq.navy.mil>

Policy documents; training opportunities; guides on risk management, acquisition

environmental issues, past performance, and more; news and assistance for the Standardized Procurement System (SPS) community; notices of upcoming events.

Navy Acquisition, Research and Development Information Center

http://www.onr.navy.mil/sci_tech

News and announcements; acronyms; publications and regulations; technical reports; how to do business with the Navy.

Navy Best Manufacturing Practices Center of Excellence

<http://www.bmpcoe.org>

National resource to identify and share best manufacturing and business practices in use throughout industry, government, academia.

Naval Air Systems Command (NAVAIR)

<http://www.navair.navy.mil>

Provides advanced warfare technology through the efforts of a seamless, integrated, worldwide network of aviation technology experts.

Office of Force Transformation

<http://www.oft.osd.mil>

News on transformation policies, programs, and projects throughout the DoD and the Services.

Open Systems Joint Task Force

<http://www.acq.osd.mil/osjtf>

Open Systems education and training opportunities; studies and assessments; projects, initiatives and plans; reference library.

Parts Standardization and Management Committee (PSMC)

<http://www.dssc.dla.mil/psmc>

Collaborative effort between government and industry for parts management and standardization through commonality of parts and processes.

Project Management Institute

<http://www.pmi.org>

Program management publications; information resources; professional practices; career certification.

RMS Partnership

<http://www.rmspartner.org>

Promotes reliability, maintainability, and supportability to enhance communication, coordination, and collaboration between industry and government and encourage adoption of integrated systems

engineering approach to RMS- and logistics-related issues.

Small Business Administration (SBA)

<http://www.sbaonline.sba.gov>

Communications network for small businesses.

Small Business Innovation Research (SBIR) Program and Small Business Technology Transfer (STTT) Program

<http://www.acq.osd.mil/sadbu>

Program and process information; current solicitations; Help Desk information.

Software Program Managers Network

<http://www.spmn.com>

Supports project managers, software practitioners, and government contractors. Contains publications on highly effective software development best practices.

Space and Naval Warfare Systems Command (SPAWAR)

<https://e-commerce.spawar.navy.mil>

SPAWAR business opportunities; acquisition news; solicitations; small business information.

Under Secretary of Defense (Acquisition, Technology and Logistics) (USD(AT&L))

<http://www.acq.osd.mil/>

USD(AT&L) documents; streaming videos; links to many other valuable sites.

USD(AT&L) Knowledge Sharing System (formerly Defense Acquisition Deskbook)

<http://akss.dau.mil>

Automated acquisition reference tool covering mandatory and discretionary practices.

U.S. Coast Guard

<http://www.uscg.mil>

News and current events; services; points of contact; FAQs.

U.S. Department of Transportation MARITIME Administration

<http://www.marad.dot.gov/>

Information and guidance on the requirements for shipping cargo on U.S. flag vessels.

All links current at press time. To add a non-commercial defense acquisition/acquisition and logistics excellence-related Web site to this list, please fax your request to Judith Greig, (703) 805-2917. DAU encourages the reciprocal linking of its Home Page to other interested agencies. Contact: webmaster@dau.mil.

Defense AT&L Writer's Guidelines in Brief

Purpose

The purpose of *Defense AT&L* magazine is to instruct members of the DoD acquisition, technology & logistics (AT&L) workforce and defense industry on policies, trends, legislation, senior leadership changes, events, and current thinking affecting program management and defense systems acquisition, and to disseminate other information pertinent to the professional development and education of the DoD Acquisition Workforce.

Subject Matter

We do print feature stories that include real people and events. Stories that appeal to our readers—who are senior military personnel, civilians, and defense industry professionals in the program management/acquisition business—are those taken from real-world experiences vs. pages of researched information. **We don't print** academic papers, fact sheets, technical papers, or white papers. We don't use endnotes or references in our articles. Manuscripts meeting these criteria are more suited for DAU's journal, *Defense Acquisition Review*.

Defense AT&L reserves the right to edit manuscripts for clarity, style, and length. Edited copy is cleared with the author before publication.

Length

Articles should be 1,500 – 2,500 words. Significantly longer articles: please query first by sending an abstract and a word count for the finished article.

Author bio

Include a brief biographical sketch of the author(s)—about 25 words—including current position and educational background. We do not use author photographs.

Style

Good writing sounds like comfortable conversation. Write naturally; avoid stiltedness and heavy use of passive voice. Except for a rare change of pace, most sentences should be 25 words or less, and paragraphs should be six sentences. Avoid excessive use of capital letters and acronyms. Define *all* acronyms used. Consult "Tips for Authors" at <<http://www.dau.mil/pubs/damtoc.asp>>. Click on "Submit an Article to *Defense AT&L*."

Presentation

Manuscripts should be submitted as Microsoft Word files. Please use Times Roman or Courier 11 or 12 point. Double space your manuscript and do not use columns or any formatting other than bold, italics, and bullets. *Do not embed or import graphics into the document file*; they must be sent as separate files (see next section).

Graphics

We use figures, charts, and photographs (black and white or color). Photocopies of photographs are not acceptable.

Include brief numbered captions keyed to the figures and photographs. Include the source of the photograph. We publish no photographs or graphics from outside the DoD without written permission from the copyright owner. We do not guarantee the return of original photographs.

Digital files may be sent as e-mail attachments or mailed on zip disk(s) or CD. Each figure or chart must be saved as a separate file in the original software format in which it was created and must meet the following publication standards: JPEG or TIF files sized to print no smaller than 3 x 5 inches at a minimum resolution of 300 pixels per inch; PowerPoint slides; EPS files generated from Illustrator (preferred) or Corel Draw. For other formats, provide program format as well as EPS file. Questions on graphics? Call (703) 805-4287, DSN 655-4287 or e-mail defenseatl@dau.mil. Subject line: *Defense AT&L graphics*.

Clearance and Copyright Release

All articles written by authors employed by or on contract with the U.S. government must be cleared by the author's public affairs or security office prior to submission.

Authors must certify that the article is a work of the U.S. government. Go to <<http://www.dau.mil/pubs/damtoc.asp>>. Click on "Certification as a Work of the U.S. Government" to download the form (PDF). Print, fill out in full, sign, and date the form. Submit the form with your article or fax it to (703) 805-2917, ATTN: *Defense AT&L*. *Articles will not be reviewed without the copyright form*. Articles printed in *Defense AT&L* are in the public domain and posted to the DAU Web site. In keeping with DAU's policy of widest dissemination of its published products, we accept no copyrighted articles. We do not accept reprints.

Submission Dates

Issue	Author's Deadline
January-February	1 October
March-April	1 December
May-June	1 February
July-August	1 April
September-October	1 June
November-December	1 August

If the magazine fills before the author deadline, submissions are considered for the following issue.

Submission Procedures

Submit articles by e-mail to defenseatl@dau.mil or on disk to: DAU Press, ATTN: Judith Greig, 9820 Belvoir Rd., Suite 3, Fort Belvoir VA 22060-5565. Submissions must include the author's name, mailing address, office phone number (DSN and commercial), e-mail address, and fax number.

Receipt of your submission will be acknowledged in five working days. You will be notified of our publication decision in two to three weeks.

